

American Forests *and* Forest Life



August, 1928

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ADEQUATE FOREST FIRE PROTECTION by federal, state, and other agencies, individually and in cooperation; the REFORESTATION OF DENUDED LANDS, chiefly valuable for timber production or the protection of stream-flow; more extensive PLANTING OF TREES by individuals, companies, municipalities, states, and the federal government; the ELIMINATION OF WASTE in the manufacture and consumption of lumber and forest products; the advancement of SOUND REMEDIAL FOREST LEGISLATION.

The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

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AMERICAN FORESTS AND FOREST LIFE

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L. M. CROMELIN and ERLE KAUFFMAN, *Assistant Editors*

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AMERICAN FORESTS AND FOREST LIFE invites contributions in the form of popular articles, stories and photographs dealing with trees, forests, reforestation, lumbering, wild life, hunting and fishing, exploration or any of the many other activities which forests and trees typify. Its pages are open to a free discussion of forest questions which in the judgment of the editor will be of value in promoting public knowledge of our forests and their use. Signed articles published in the magazine do not necessarily reflect the views of the Association. Manuscripts must be accompanied by return postage. Editorial and Publication Office, The Lenox Building, 1523 L Street, Washington, D. C.

Timber as a Crop



Starting a lumber crop; transplants in a lumber company's forest nursery

Wild grass was once the only source of hay. After a while hay became valuable enough to be treated as a cultivated crop.

Until recently wild timber was the sole source of forest products in America. Now timber is beginning to become valuable enough to be cultivated -- to be cropped.

So enters forestry.

It is useless to bewail the "destruction" of the wild forests. They could not be preserved in large areas (outside of public ownership) any more than the wild grass of the prairies could be preserved.

Forestry is a matter of economics, not esthetics. It is practiced only when practicable.

It now promises to become practicable. Hundreds of forest operators are feeling their way toward the new era on a hundred million acres of forest land.

But one thing is sure -- forest products must be patronized if they are to be produced by private enterprise. Forest use and forestry are united twins.

National Lumber Manufacturers Association

702 Transportation Building, Washington, D. C.

"American Standard Lumber from America's Best Mills"

AMERICAN FORESTS

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WILD LIFE IN A FOREST FIRE By ARCHIBALD RUTLEDGE



THE MENACING agents of destruction, storms, floods and fires operate against all living things. We are more accustomed, however, to think of their devastation in terms of dollars and cents than we are to consider what might be termed their secondary destructive effects; the toll they take on life and property other than man's. Particularly have I

always been interested in the effect of forest fires on the wild life native to those regions swept by flames; and many a time I have visited a fire in the woods to watch the effect it has upon the wild creatures whose homes are being destroyed.

If my observation is correct, a forest fire at night is far more destructive of wild life than is one in the daytime. For example, watching a fire in the Tuscarora Mountains of southern Pennsylvania, I kept about a hundred yards ahead of the advancing flames, which, unfanned by wind, were just eating their way redly along. The swath being cut, however, was a wide one, and as the fire was slow-burning, it was disastrously complete in what it did. I watched many wild things coming out of the smoke, and almost, it appeared, out of the flames. Their general aspect was one of discomfort and boredom rather than downright terror, such as many of them would have betrayed at the dread presence of man. I saw a group of five whitetail deer

walking in single file, a huge stag leading. About every thirty yards they would pause to look and to listen; but it seemed to me that they were as wary of what might be the danger in front as they were of the peril behind. Indeed, they appeared to gauge sanely the nature of the fire. Apparently they had often seen fires before, and their equanimity was not greatly disturbed by one.

Many gray squirrels I saw, running on the ground and along logs. Some of these fugitives escaped. But squirrels, along with raccoons and other haunters of den-trees, are really the worst sufferers in bad forest fires. At the first alarm they will make for home—that is, for a favorite hollow, and if that tree goes, they do, too. However, it is a fact that many of the ancient den-trees are among the largest of the forest, and for that very reason may survive a fire when scores of smaller trees go down. I saw ruffed grouse tearing off along the mountain-slopes, brown rockets driving at cyclone-speed. A gray fox I saw, stealing along in his artful fashion. He caught a wood-rat close to the fire—a fugitive ghoulishly taking advantage of a fellow-fugitive! Then there were rabbits and many other small creatures. As long as daylight lasted, I could not see among the wild things any panic; but, as I have said, this was a slow fire, burning leisurely through the forest. If the flames had been windswept and roaring along wildly, without doubt that element of incontinent flight would have been present.

The same fire was visited at night; and as my purpose was solely to watch the wild things, I gave that matter my

full attention. I wish I could forget some of the sounds I heard. Clearly above the crackling of the flames and the soft roaring of the fire I could hear the mad screeching cries of the poor trapped squirrels. I was near a den-tree that was afire. Perhaps a dozen gray squirrels had taken refuge in it. At last the old patriarch went crashing down; and the pitiful cries I had heard from its beleaguered top ceased suddenly. Once on the ground, even in a dangerous fire, a squirrel has an even chance for safety. I heard a ruffed grouse start hurtlingly upward in superb flight, only to run headlong into a dead chestnut. I heard the impact, and the dead-weight thudding fall. At other times at night I have flushed grouse, and they seemed able to make off clearly. But the woods were dense with smoke, affecting painfully all the senses. In general, however, I do not believe many birds of any kind perish in forest fires. Wings afford a means of escape that nothing else could.

One afternoon, just about sundown, while I was in a section of the Carolina pinelands that was then surrounded by a forest fire, an island of greenery in the sea of encroaching flames, I was attracted to a dense thicket of bays only ten square yards or so in area, that occupied the center of the unburned tract. The fire, advancing somewhat slowly and softly on account of the damp chill of the coming night, with its attendant rise of dew, was about a hundred yards away in each direction. It appeared to me a place where wild life might be taking temporary but insecure refuge; therefore I approached it cautiously, from the leeward side.

No sooner had I come alongside than I heard, among the

dry ferns and the dead leaves that covered the sphagnum moss of the place, a stealthy step. I say stealthy; and that kind of footfall made me know that it was no half-wild hog's that I heard, though many a one had been seen running along, squealing disconsolately over the general aspect of life. But this step was either that of a deer or a turkey. Dropping to one knee I listened intently for some further sound from the creature, or for some sight of it. For at least a minute it was still; and that is a long time when one is tensely listening. Then came another footfall, but attended this time by the crackling of the small dead branches of the sweet-bays. This told me that the creature was a deer. A wild turkey may make much noise coming through dead leaves, but seldom does it crack a bush on which it does not step.

These dead branches were being forced out of the way by a deer that was coming out into the twilight of the pinelands to browse and to roam. But, having drowsed all day in that thicket, he was coming out into a very different world from the one he had left at dawn. I wanted to see exactly what he would think of it all, how he would act. At last, out of the head of the little pond there appeared the graceful and sensitive head of a buck. His ears were set forward as for a moment he looked at the fire as it gleamed and crackled in the broomsedge. The picture of vividly alert intelligence, he suddenly decided on his course. Lowering his head, he stole forth noiselessly out of the thicket. To the west of us was the wide tract through which the fire had already passed, rimmed vividly on the near side by the on-



Fire takes its terrible toll. Sounds never to be forgotten are the cries of the small creatures of the forest, trapped by the rushing flames. And pitiful indeed is the story of lost wild life they write in passing

coming flames. The buck, not the least disconcerted by the ring of fire in which he found himself, moved forward steadily in that eerie, effacing way that a deer has when undisturbed. He reached the fire, when, with one great bound and a show of his white regimental flag, he was lost to sight in the smoky woodland. I doubt if he had ever seen a real fire before; but he handled himself as if it were nothing for him to be trapped by a ring of flames. The very next afternoon, not far from that same place, I waked up an old, old stag that had been serenely lying in his bed in some small bay-bushes, while not a hundred yards to the left of him a forest fire roared terribly, and while all the woods were filled with

acid and blinding smoke. I believe that, lying close to the ground as they do, deer do not, when couched, get the full effects of smoke from a fire. Judging from the behavior of this second buck, a deer takes small account of a fire until it has literally run him out of his covert. This old stag, when I roused him, made off in long graceful leaps, his course taking him close to the high sheets of flame. When last I saw him he had passed through the fire and was rocking away safely through the distant forest.

In the swampy and pine barren country in which the particular fires occurred, there are many quail; the covies do not often number more than a dozen birds, but there are covies in abundance. When the fire swept their damp coverts and their sunny feeding-grounds in the broomsedge fields under the pines, these birds were in sore straits; for, though, as every sportsman knows, the quail can undoubtedly make good use of his wings, he is essentially a ground bird, and rarely takes wing except when disturbed. As quail are very fond of frequenting one small locality, they suffer from fire because their home is in fact destroyed. If unmolested, and if the nature of the cover does not change, these fine birds will remain year after year on a remarkably limited range.

As I walked through the burnt country, every few hundred yards I could hear the calling of quail. Once or twice a whole covey, strung out in line, with all the members of the family in plain view of one another, would set up the far-penetrating sweet gathering-call of the old mother. They were spiritually distracted. Many times I watched a

covey running thus on the burnt ground, and heard the birds calling in a most pathetic and appealing way. But these birds were exceedingly wild, and appeared well able to take care of themselves. As my approach through the burnt and crackling bushes was noisy and obvious, they would flush at a distance of at least a hundred yards, and their flight sometimes carried



The picture of vividly alert intelligence, the young buck stepped noiselessly out of the thicket, sensitive ears set forward as, for a moment, he looked at the fire, gleaming and crackling, before deciding on his course

ried them clear out of my vision. Two or three days after the fire had passed, all these birds had moved into a narrow strip of woodland that had been saved from the flames.

The escape of wild creatures from a forest fire depends upon conditions easily understood. In such a fire as the Miramichi fire of October, 1825, in Maine and New Brunswick, countless wild things must have perished. That awful conflagration burnt over three million acres of forest, and took a toll of one hundred and sixty human lives. On the coast of Oregon, the Netucca fire of 1853, burned three hundred and twenty thousand acres. The Cloquet forest fire of 1918, in Minnesota, exacted, in its wide sweep, a fearful toll of nearly four hundred human lives, and did damage to property estimated at \$30,000,000. When such conflagrations come, all life is sure to suffer; and while, as I have related, I have seen wild creatures take small account of fires, it must be remembered that they were not terrific conflagrations, sweeping to death all before them. Such conflagrations are brought about nevertheless by small beginnings; by much material to be burned; and by a high wind. A single flame in a forest may well represent a primal force which, unleashed, will mean utter devastation in its most hideous form to all living things of a vast surrounding region.

Forest Flashes from the South

By W. R. MATTOON



This is Charlie Rowell, a boy of the Lone Star state and a 4-H Club member in timber growing, proudly exhibiting the ten-foot wide fire lane around his acre plot of shortleaf pine in Marion County, Texas



BURNT OVER

The upper plot has been burned annually, and the lower one protected. At the age of thirteen years, the unburned trees average nineteen feet in height, while the burned are only seven feet. So many trees have been killed by the fires that the land had only one quarter the number of trees which it should contain



Does yearly burning injure pines? It has long been the common belief in the South that "woods burning" does little if any harm, but Uncle Sam has settled the question. These two plots of longleaf pine on the land of Henry E. Hardtner, at Urania, Louisiana, have been closely watched since seeds germinated in December,

1913

PROTECTED

New Forestry Project To Be Launched

The American Forestry Association Announces Raising of \$150,000 Fund for Forestry Education in Florida, Georgia and Mississippi



SUCCESS has finally crowned the efforts of The American Forestry Association to raise a fund of \$150,000 to be devoted to the promotion of forestry education in Florida, Georgia, and Mississippi. Announcement to the effect that the fund has been fully subscribed was made by the Association early in July. Mr. W. C. McCormick, formerly Assistant

State Forester of North Carolina, has been selected as Regional Director of the project, and preliminary activities are under way looking to the starting of actual field work early next fall. All work is to be carried out under a localized plan of cooperation with the state forestry departments, the state forestry associations, and other local agencies.

The project, eclipsing in scope and intensiveness anything ever before undertaken in the field of popular forestry education, will extend over a period of three years and will be directed primarily to the people inhabiting the forest regions of the three states. It is the universal custom of these people to burn the woods every year in the belief that fire improves grazing conditions and eliminates ticks. It is this custom which makes forest fires the great barrier to forestry throughout the south. Through its educational work the Association will seek not only to enlighten the rural people as to the damage done by forest fires in destroying young timber, valuable forage plants, soil fertility and wild life, but it will carry to them a clear picture of how the protection and perpetuation of these resources will contribute to their own welfare.

"In no section of the country," declared the Association in a recent statement, "are forest fires so currently widespread and so detrimental to forest regeneration as in the south. The seriousness of the situation is reflected in the fact that eighty per cent of all forest fires reported in the United States during the past ten years have occurred in the southern states. Over one-third of the entire pine area, embracing millions of acres, has been so completely lumbered and so repeatedly devastated by fire that it lies idle and non-productive—a mortgage upon the counties and the states.

"The process of forest exhaustion in the southern states, followed by rapid pyramiding of idle cut-over lands, is

striking directly at the prosperity of many sections of the south. Probably its most serious local effect is its reduction of taxable property, and as a consequence a lack of good roads, good schools and other progressive developments, and increased assessments upon forest land, livestock, and other forms of property. In addition, it is robbing the south of two of its most important industries, lumbering and naval stores, and is hastening the time of wood shortage, not only for the south, but for the people of the eastern United States, who must look to the south as one of the future sources of lumber, turpentine, resin, and other forest products. Forest fires are also wiping out the game and wild life over vast areas throughout the south.

"These annual holocausts, arising from a traditional custom of great numbers of rural people ignorant of the social and economic benefits of forests, place a tremendous handicap upon the efforts of nature and man to renew the forests on millions of acres throughout the south. To stop these fires and to make the growing of forests a safe undertaking is the great and immediate problem of forestry in the south. Favorable climate, rapidity of tree growth, variety of forest products producible, and close proximity by rail and water to the great wood-using centers of the country give these lands, if intelligently used, unequalled advantages in creating local wealth and prosperity and a future supply of timber for the people of eastern United States."

The project was first proposed by The American Forestry Association more than a year ago. Recognizing that the forest fire evil of the south can be eradicated only by localized education beginning with the younger generation and through them reaching the adult population, the Association proposed to agencies in Florida, Georgia, and Mississippi, where the forest fire situation is particularly aggravated, that they co-operate in raising an educational fund of \$150,000. The plan called upon each state to raise locally a quota of \$19,500 for the three-year period and for the Association to raise from outside sources a total of \$91,500. The states accepted the proposal with enthusiasm and have completed their quotas. The Association has likewise raised its portion of the fund through contributions pledged by the Commonwealth Fund, Mr. John D. Rockefeller, Jr., Mr.

George D. Pratt, President, and many other public-spirited members of the American Forestry Association. The Florida Forestry Association and the Georgia Forestry Association were instrumental in raising the state quotas of Florida and Georgia. In Mississippi the state quota was raised through the agency of the Mississippi Forestry Commission. It will be possible to conduct the work in Florida and Georgia on a larger scale than in Mississippi due to the fact that the Florida State Board of Forestry, the Georgia State Agricultural College at Athens and the Georgia State Board of Forestry will co-operate to the extent of \$10,000, \$3,000 and \$2,500 a year respectively. These expenditures will be in addition to the regular State quotas.

Education of the school children by visual and personal contact methods will be featured. In each state motor trucks equipped with complete moving picture apparatus, lantern slides and forestry material will travel throughout the rural districts giving moving picture talks on forestry at schoolhouses, meeting houses, churches and other public meeting places. Simple forestry material will be placed in the schools adapted to the use of both teachers and children. The object will be to give simple but direct lessons tending to instill in the children and their parents the importance of forest fire prevention; simple facts relating to the more important southern trees, their growing requirements and use and value in making idle lands productive; the relation of timber growing to general farming and local prosperity.

All work will be localized to the greatest possible degree. Indeed, cooperation with local agencies within the states will be the keynote of the project. This cooperation has already been pledged by many agencies in each state, including, in addition to state forestry departments and forestry associa-

tions, state superintendents of education, many county superintendents and school teachers, state extension services, normal schools, state universities and agricultural colleges, lumber and wood-using companies, women's clubs, chambers of commerce, railroads, and state game agencies. Cooperation from a number of outside organizations, including the Forest Service and the Agricultural Extension Service of the United States Department of Agriculture, has also been promised.

With the localized and intensive methods planned, the Association believes that at the end of three years the project will show the following definite results:

1. The rural schools well supplied with suitable forestry material, the teachers' interest in its use awakened and developed, and the children themselves given an intelligent and intimate conception of what forestry means to them.

2. A changed attitude toward woods burning, not only on the part of the younger generation, but a large percentage of the adult population inhabiting the forest regions of the three states. This means a marked decrease in the number of forest fires and the area burned over in the three states.

3. Forest land owners, assured that their reforestation efforts will not be burned out, will in rapidly increasing numbers apply the principles of forest management to their lands.

4. An awakened public interest in forestry throughout each of the states which will assure the state forestry departments adequate local support to carry on the work without further help from the outside.

Furthermore, it is felt that the demonstration of what can be accomplished by direct localized educational effort in Florida, Georgia, and Mississippi will awaken other states in the south to engage in similar work.



W. C. McCORMICK

Who has been appointed Regional Director of the Association's forestry educational project in the South. He was formerly Assistant State Forester of North Carolina and was for several years connected with the United States Forest Service in fire-control work

"The two great questions before the South, as I see it, are first, home ownership, which is the basis of all civilization and, second, the intelligent utilization and preservation of our forests, which is an economic necessity.

"Shall these two important economic questions be settled intelligently or shall the South drift into its new development, accepting what the accidental fates deal out? By taking thought early and constantly, the citizens of the South can make this development almost what they will. . . . Education is the only method of reaching these goals."—W. W. Long



The West Branch of the Penobscot, with Mount Katahdin in the background. Thoreau once dreamed that he pushed a canoe up the rivers of Maine till he got so high that the rivers were dry, when he continued to progress by "pushing a little harder." His three real trips completed a great circle around Mount Katahdin

Thoreau and I Visit Mount Katahdin

By HARRY ELMORE HURD



RECALL a dangerous little book that fell into my hands one day, with a cover as red as the famous handkerchiefs worn by the first Harvard oarsmen. It was Karl Marx's "The Communists' Manifesto." This revolutionary document concludes: "Workmen of the world, arise! You have nothing to lose but your chains!"

If I were starting out tomorrow to campaign the world I would put on my banners of revolution: "Pull Your Shirt Flaps Out!" This is the banner of independence ninety miles north of Bangor in the woods of Maine. I know, because I signed my own declaration of independence and started for Mount Katahdin with Henry David Thoreau. To omit to tuck in this important bit of human drapery while swaggering down Fifth Avenue would be a calamity, but up under the blue bulk of old Katahdin it is necessary to free one's shirt-flaps, especially when it rains. It is a daring gesture of disrespect made in the face of old Granny Convention.

I sat in my cabin one drizzly day with my ears attuned to the rhythmic hammer of rain on the roof. Outside of my window a newly-arrived fisherman was trying a few swishy

casts from the canoe landing; bronzed guides sloshed past with their shirt-flaps out. I like to believe that Thoreau wore his shirt-flap out in 1846 when he shoved up the Penobscot River "about one hundred miles by the river above Bangor." He tells us that a red-flannel shirt was a favorite color with lumbermen, as it was "reputed to possess some mysterious virtues and to be most healthful and convenient." So if the wildest country in eastern United States appeals to you, pull your shirt-flap out, gather up your wangan, and join Thoreau and me.

Spread out a map of Maine and put your thumb on Mount Katahdin, swinging your forefinger around the circle of Thoreau's adventure. The Monarch of Maine, rising five thousand two hundred and sixty-eight feet above a great plateau, looks down upon a former archipelago. Thoreau once dreamed of "pushing a canoe up the rivers of Maine, and that, when he got so high that the channels were dry, he kept on through the ravines and gorges, nearly as well as before, by pushing a little harder." By making short portages one is able to go in almost any direction with a canoe. Thoreau's three trips completed a great circle around Mount Katahdin. They pushed up the West Branch of the Penob-



Katahdin, inspiration of Thoreau, reflected in the still waters of Mirror Lake. This monarch of Maine rises in grandeur and beauty over five thousand feet high above a great plateau

scot River from Norcross, through North Twin, Pemaduncook and Ambejeus Lakes, traveling *picquer de fond* and by paddle, upward through the Debsconeag and Packwackamus Deadwaters and onward to the Sourdnehunk River and Mount Katahdin, as many persons approach the York Camps today.

If, instead of entering the "River that flows between mountains," they had poled and carried up to Ripogenus Lake, they might have paddled into Chesuncook Lake, "a place where many streams empty in," without an island in its eighteen-mile stretch. Chesuncook, Caribou and Ripogenus

Lakes have been thrown into one flowage by the Ripogenus Dam. Thoreau's trip from Moosehead took him into these lakes and his second trip pushed on up the Umbazooksus through the lake of the same name, across the Mud Pond Carry into Chamberlain Lake, thus touching the Allegash headwaters. A short carry, or canal trip, carried them into Webster Lake, forming the headwaters of the East Branch of the Penobscot River. The trip down the East Branch leads through Grand Lake, completing the circle around Mount Katahdin into the "Rocky River" again.

It is still true that "he who rides and keeps the beaten track studies the fences chiefly," but whether you enter the Sourdnehunk Plateau by steamer, pole or paddle from Norcross or by motor along Moosehead Lake and Ripogenus Dam to Little Sourdnehunk tote-trail, makes little difference. The wild country is still there to lure you. The traveler may be surprised, as I was, to learn that Moosehead Lake is the largest fresh-water lake wholly within the boundaries of the United States. It is forty miles long and has five hundred miles of shoreline. "What a place to live, what a place to die and be buried in! There certainly men would live forever, and laugh at death and the grave," exclaimed Thoreau. Yes, men have laughed at death. There is a rounded grave by the tote-road. Back in the ugly days of early logging, men frequently started up the long tote from Millinocket or Norcross, ignorant of the forest's dangers, clad in oxfords and summer clothing, headed for a depot camp. Yes, men did laugh at death.

If one substitutes "a few hours" for "a few days," it is still true of the six hundred mile circle of Katahdin's vision that "you have only to travel a few days into the interior and back parts even of

many of the old states to come to that very America which Cabot and Gosnold and Smith and Raleigh visited."

I shall never forget the "Shepherd of the Sticks," Mr. George McGuire, silhouetted against the sky at Ripogenus Dam, which holds, with its bulky shoulder, the forty-mile flowage of Ripogenus, Caribou and Chesuncook Lakes. The dam is four hundred feet long, sixty-five feet high and forty-seven feet wide. A tug-boat tows the great boom of logs twenty-four miles from up the lake to the dam, where more than ten thousand logs are put through the "driveway" in a day. When a stick lags behind, tired by its long journey

from distant Canada and fearing to take the final plunge toward the Horse Race and the remaining fifty-five miles to Millinocket, the Shepherd of the Sticks prods it with his long spiked pole, shooting it sixty feet into the torrent below.

I watched the brave boom-man run trippingly along the logs to relieve congestion at the four-corners, always wet, always in danger. These men of batteaux and pole are heroes of peace-days. I crawled under an overturned batteaux with Thoreau one purple evening, to explore its inwards. A batteaux is "a sort of mongrel between the canoe and a fur-trader's boat." As for me, I prefer a canoe which can travel wherever it is damp, although the double-ended lumberman's craft is built for hardships and river-jams.

Those who enjoy "Tin-Lizzie" vibrations will surely enjoy the seven-mile buck-board ride to Twin Pine Camps on Daicey Pond, in the heart of the Sourdnaunk Plateau. The Indian name of this river means "running between mountains." The tote-road runs between the Brothers and their companioning peaks on the east and the Double Top Group on the west. From an altitude of thirty-eight hundred feet, the Sourdnaunk looks like a twisted brown snake basking in the sun. The wheel-spokes drink mud and careen from boulder to rut, side-swiping like a lumberjack returning from the settlement. The river is crossed sixteen times. When the Spring freshets laugh down the valley this is a real adventure.

The tote-road suddenly turns toward Mount Oji, beyond which lie Barren and Katahdin. Irving Hunt, one of the human pack-horses who opened this region to man, told me that he once read a missionary story of a cannibal chief, in blackest Africa, named Chief Oji. With a twinkle in his eyes, he said, "When I came up here, there was Oji's name on the side of the mountain." Three landslides form "O J I." Beyond this mountain the York Camps are reached.

For thirty-odd years, since he opened the wilderness to lovers of the forest's vast stillness, the sun and rain have pelted upon Irving Hunt's old felt hat. I do not know how old this Irving is, but he swings on his heavily loaded basket like a youngster. He twisted his faded moustache, twinkled his eyes with a searching expression, and asked, in his best Yankee manner, "Do you like to go fishing?"

I confessed to having acquired the habit of laying aside



If the wildest country in eastern United States appeals to you, gather up your staff, reel and gun and follow Thoreau and me on the roughly picturesque trail to Mount Katahdin and adventure

my books and dress suit for wools and khaki. Irving eyed my red-gray shirt, measured me in just the same way that a man sizes up a setter dog which he would like to buy.

"I don't know any region for miles," he said, "that offers the variety of fishing that we get here. There are some big fish in Daicey, Lost and Foss-Knowlton; good fish in Elbow, Grassy and Slaughter. God, how the lumberjacks used to slaughter 'em! No fun fishing then. There is only trout in the ponds and lots of good feed."

One can no longer hire a guide for one dollar and fifty

cents, plus a fifty-cent canoe tax, the price Thoreau paid Polis, the Indian chief, but Irving Hunt and other splendid fellows are friends forever. Like the Indian, they "also lack the white man's conventional palaver and smartness." To sprawl upon the "deacon seat," while your guide prepares "spuds" and trout, or to listen to tales of other trails, is worth ten times the modest fee paid for guides.

There is a most interesting picture of Ben York hanging in the Social Cabin at Twin Pine Camps. He looks as though he had just stepped out of a covered wagon. His Yankee-eyes look out from under a broad felt hat across the burnt lands. He hears a love-stricken bull-moose thrashing like falling trees in answer to the plaintive fly-in-the-bottle call poured upon the morning air from a birch-bark funnel. Ben is whiskered, stalwart, alert. He holds his rifle in his knotted hand. He personifies days that were but are no more. The following story is told of Ben. One day a hidden phonograph record captured the wooing fly-in-bottle-sounding moose call given by Ben and finished with a grunty grunt. In common with the custom of earlier days, Ben frequently imbibed too freely, and on one of these occasions, his friends sat him down in front of the phonograph, tucked the apparatus resembling a doctor's stethoscope in his ears and slipped on the moose-call record, which he had unconsciously made. Ben listened attentively to the call, straightened up and commented: "That call is pretty fair but that grunt at the end would drive a moose away!" Eugene York was shoving us across Kidney Pond one morning. "See that cove?" he said. "Every year a white-faced moose used to come out there. Once when we were camping the cook threatened to shoot him, and the boss swore he would fire him if he did. A few weeks later the cook was seen to enter the woods with a gun, and the white-faced moose never came back. The cook was fired and a short time afterwards confessed killing the moose.



George McGuire—the "Shepherd of the Sticks"—watching for recalcitrant logs at Ripogenus Dam. A tug-boat tows the great boom of logs twenty-four miles up the lake where more than ten thousand "sticks" are put through the driveway in a day. The bulky shoulders of this great dam hold the forty-mile flowage of Ripogenus, Caribou and Chesuncook Lakes

These men have hearts. I was watching a guide whittle and think. The camp cat brought in a chipmunk, unhurt but badly frightened. The guide freed the squirrel with language appropriately omitted here. He would have shot a deer or a moose to eat, but only with a sporting chance.

I proposed a trip to Foss-Knowlton Pond in order that I might catch a string of fish for my friends. We crossed Daicey Pond, slogged through a blowdown to Lost Pond and beyond to our destination. A high sun in the morning made it difficult to catch our noon meal, and two clashing

thunder storms made afternoon fishing impossible. Early in the evening, however, the Mayfly hatch came on. This member of the family of two hundred ephemerids has a two-year cycle. After a succession of molts and growths, a crawling insect comes to the surface of the water, cracks open along its brown skin, shakes out its yellow wings like sails, and, if not eaten by a trout, goes into the near-by woods to mate.

Literally hundreds of trout flashed silvery. I thought of Thoreau's perfect description as I looked at the pond's dark rim. "It is all mossy and moosey. In some of these dense fir and spruce woods there is hardly room for the smoke to go up, the trees are standing night, and

every fir and spruce which you fell is a plume plucked from night's raven wing. Then at night the general stillness is more impressive than any sound." A drunken moon reeled up the ragged sky. Clouds were doing scarf-dances, whirling in veils of yellow gray, waltzing about a watery moon. Mount Katahdin pulled a fleecy comforter over his cold bald head. Night and the moon ruled absolutely.

We had not eaten; our belts were loose and we were wetter than a lilypad. Fred, my guide, sat humped in the stern, smoking. Not a deer crossed the tangled blowdown, not a moose wallowed in the logan, not a bear shuffled down the tote-road; but hundreds of trout flashed like

(Continued on page 490)

All Through the Night

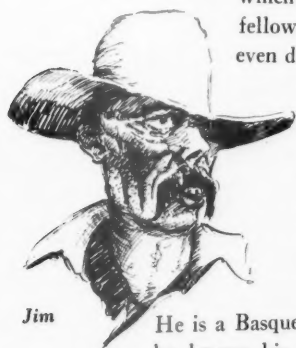
By ALFRED G. CLAYTON



HAD it been some fellows that I know, they would have had it out with the bear. Not through any particular fearlessness, understand, or fortitude, but because this would have been the easiest course. It really required a super-abundance

of faith and courage for the concerted action taken by the trio.

It so happened that I had been riding Horse Ridge on a grazing trip. It is a long, rocky, bald ridge, most all of which is above timberline where a fellow pretty near freezes to death, even during the two summer months



Jim

when it is at all habitable to a white man. I stopped at one of the sheep camps overnight and there happened to meet Felix.

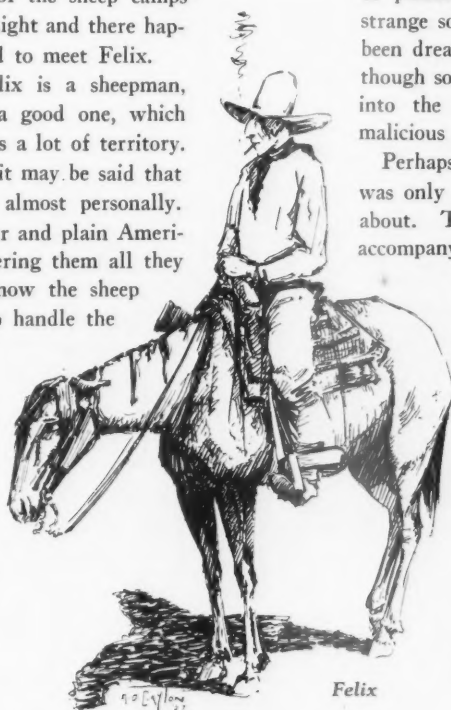
Felix is a sheepman, and a good one, which covers a lot of territory.

His brother, Allesandro, is the herder and plain American Jim is the campmover. Considering them all they are a very efficient outfit. They know the sheep game and, better still, know how to handle the government range to get the very best results for all concerned.

It is a common thing on the sheep range to have visitations from bears. They do not seem to be looking for trouble, rather something to eat that is easy to get. True enough, once in a while one will run wild through a band of sheep and kill a few in its haste to get away. Then again, when disturbed in the act of breaking into canned goods with its teeth, eating the bacon and scattering the flour, one will tear things up somewhat by going out through the rear end of the tent. Always the rear end; I have never known one to go out through the door as they should. This seems to be one of their characteristics.

Early in the season this very thing had happened to one of Felix's camps. The animal had made the customary exit through the back end, tearing things up aplenty, much to Felix's chagrin. He then swore that he would make short

Felix, Jim and Allesandro knew their sheep, almost personally—but a bear in the night was another thing. This story by Mr. Clayton, a ranger on the Washakie National Forest, Wyoming, was awarded third prize in the Association's bear story contest for forest rangers. Editor,



Felix

work of the beast that had so wrecked his property, should they ever meet again; or, for that matter, any other bear under similar circumstances would suffer a sad if not tragic fate.

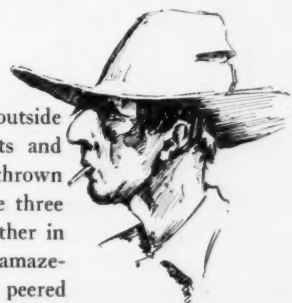
And then one night during the same season the tepee was placed on a small hill, nearly a mile to the supply camp. A rocky ridge

with a precipitous canyon was at its back. A little food had been taken to the tepee, where all three men had eaten their suppers, and for some reason or other remained. Perhaps a particular craving that night for the fellowship of man caused them to decide, unanimously, to spend the night there, and in the one bed, rather than return to the other beds at the main camp. Whatever the reason, they stayed.

Some time during the night, certainly after several hours of peaceful repose, Felix was awakened by a strange sound. At first he thought that he had been dreaming. But no—there it was again, as though someone on the outside was trying to get into the tepee, scraping and scratching with malicious intent on the canvas walls.

Perhaps his moving had disturbed Jim, for it was only a few moments before he was stirring about. Then a kettle was overturned with an accompanying clatter and Allesandro, the herder and the third member of the party, came to life most abruptly.

A somewhat confused and subdued consultation followed. This was followed by stealthy gropings of all three about the interior of the tepee. The search continued until the whole tepee had been thoroughly canvassed. Then it was that Jim was heard to remark; "There ain't no use, that gun's down at the main camp. I seen it there before I come up."



Allesandro

In the meantime the noise outside continued. One by one pots and pans were overturned and thrown around while in the tepee the three men sat and stared at each other in speechless and wild-eyed amazement. No one had as yet peered without—that called for courage,

and courage at that time was sorely missing. Plainly something had to be done and done at once because they all had the same sickly suspicion of what was outside, and that it might tire of amusement among the pots and pans and decide that more interesting entertainment lay within the tepee. Things were much too uncomfortable for good shepherders.

Some sort of action was vaguely taking shape in Felix's mind. Vainly he tried to summon courage enough to look out, but there was no use. Each time his heart failed him and he withdrew to the center of the tepee. Finally all became quiet. The three waited anxiously for further sound. None was heard and their spirits rose. Finally Felix, cautiously at first and then somewhat recklessly, opened the door of the tepee and peered intently in the direction from which the disturbing sounds had come.

What he saw by aid of the almost brilliant moonlight fairly froze the blood in his veins. For a lingering and terrifying second he was speechless, paralyzed with fear; for there, not more than fifteen steps away, and grown weary of looking through empty cooking utensils, was a huge bear, black or grizzly. He was heading straight toward Felix, as though bent upon some particular query and that query having much to do with the safety of a certain Basque sheepman. All this Felix saw, and it must be understood that much credit is due him for his powers of observation, considering the short time he had in which to observe. Action was needed at once and action he proceeded to take, without further ceremony whatsoever.

Funny how a man suddenly thrown face to face with that which he disdains to encounter, though expects, will, as a rule, resort to a defense which in saner moments would have taxed his capabilities. Silence, whether premeditated or accidental, would have undoubtedly blended deliciously with the purposes of the bear, but noise, especially of the vocal variety, would complicate matters for him, ruffle his poise, and, without question, possess him with the very same idea that haunted the terrified Felix—to take some immediate action for self-preservation. But of course Felix, being a good sheepman, did not know this.

Undoubtedly the sheepman's vocal action was awe-inspir-

ing. In any case it started the action, for after one good lusty yell he turned and proceeded to travel. Scrambling wildly over his brother sheepmen, who were anxiously waiting his findings, he grasped a pillow and one of Jim's shoes for clothing, and, never turning to warn the others, he disappeared. Naturally, in such haste he had little time to pick a place of exit, so he did the only logical thing. Straight through the back of the tepee he sailed.

No sooner had Felix removed himself from the scene than the other two likewise went into action. A few American oaths were heard, interspersed with a few which, for want of a better description, could be called Spanish. Perhaps Felix's

brother Alessandro, being the younger and by far the smaller of the remaining pair, got started first. Anyway, he got into second place and kept it, closely followed by the lumbering Jim, who held tightly clasped in one hand Felix's hat, while in the other he held a sock belonging to Alessandro. Probably Alessandro gave no



Dawn found them still huddled by the fire

thought to the detail of wearing apparel—most certainly he did not delay long enough to gather anything.

Felix was well in the lead when the ledge was reached, but he did not stop. As a matter of fact he increased his speed, if such were possible. Over and down he went. There followed, of course, Alessandro and Jim and at the same speed. When they had picked themselves up, Jim, by some kind sweep of fate, uncovered some matches in his shirt pocket. Felix and Alessandro, panted around until enough wood had been accumulated to kindle a fire, and there they remained—all through the night. Dawn found them still huddled by the fire, gazing fearfully in the direction from which they had come hours earlier.

Daylight brought reinforcements of courage, and the master sheepmen marched shamefacedly back to their camp, where a thorough search was made to convince each other that the intruder was not still lurking about. It was while making this search that Felix discovered the tracks of a large black bear, made while the animal was in full motion—pointing in an opposite direction from the camp.

Forestry in the Greater South

By DR. W. W. LONG

Director, Extension Service, Clemson Agricultural College



THE effect of slave labor prior to the Civil War, followed by ignorant and cheap labor after the war, was undoubtedly one of the outstanding fundamental difficulties in the South's forest and agricultural development. Slavery was a mighty economic influence in the southern states from the opening of the eighteenth century until it was abolished, and the emancipation of slaves precipitated upon the South a horde of ignorant, inefficient laborers unsuited as a rule to any but the crudest manual operations. They could not be depended upon, with few exceptions, to produce varied crops such as truck, fruits, grains, dairy and animal husbandry products, or to use improved farm machinery. Science of forestry manage-

ment and preservation was far beyond their grasp.

The one-crop system, slovenly manner of cultivation, the depletion of the soils can all be charged to this ignorant and cheap labor. Intelligent farmers of the South have at all times been thoroughly acquainted with the improvements in agricultural methods and implements, yet with slave and cheap labor they could not adopt them. This reference to the negro is done in a spirit of kindness. His presence in the South was not of his own volition, nor his ignorance of his making. When all is said and done, the South owes the negro a debt and the negro owes the South a debt, and this mutual debt is permanent and can never perhaps be fully liquidated.

Half of the farmers in the United States are in the



A tract in South Carolina covered with young loblolly pine seedlings. The South has 400,000,000 acres of land not in cultivation, and the best method of lightening the tremendous burden of carrying the investment and paying taxes yearly on this large area of idle land would be to put it in forests and protect it from fire

South. We have 3,130,000 farms with a rural population of approximately 15,000,000, three-fourths of which are white and one-fourth are colored. Fifty-eight per cent of the white farmers and twenty-four per cent of colored farmers are either full owners, part-owners or managers of farms. In other words, forty-nine per cent of all the farmers in the South own some land, and fifty-one per cent are tenants. The question of tenancy is not confined to the South. It is a growing menace to rural civilization in all of the agricultural states of the Union.

The question arises, how is it possible to continue to construct an attractive and permanent rural civilization, and to develop a diversified system of agriculture? The contrast as to the tenure of owners of land and the tenants is most striking. It is recognized by all students of rural economics that unless some effort is made by which these tenants can become owners of their homes and farms, and be given a sufficient time to pay for them, and at the same time maintain a decent standard of living for their families, the rural districts will be deserted and these tenants will enter the cotton mills and other industrial centers. If this movement of the intelligent, ambitious and industrious rural citizenship continues from the farms to the industrial centers for the next two or three generations, we will have the less-intelligent, less-ambitious, composing our rural civilization. For the best interest of the state and country this would be disastrous. I realize that there is a group of economists advocating that the agriculture of the country be entirely commercialized by substituting corporation farming for the individual farm owner.

Perhaps, looking at it solely from the financial standpoint, it would result in greater profit, but for the welfare of the nation you can not separate the home from the farm. Under no other conditions is the partnership relation so pronounced as in family life on the farm. The home is the farm headquarters, the office of the business, the man and wife and the children are members of the board of directors and all matters relating to the farm and the home are talked over around the family fireside. That is one of the essentials and peculiar values of country life that is worth preserving. It characterizes no other business to such a degree.

The time has come in the life of this nation when we

must decide whether or not we shall have a well-rounded, self-sustaining national life, or whether we shall commit the fatal blunder of so many nations of the past and sacrifice our agriculture to the building of cities, expecting our food to come largely from abroad and from men and women of the landless class. If America is to continue to be the great nation of the world, there is but one answer to this question, and that implies the imperative necessity of sympathy, understanding and cooperation among agriculture, business and industry. They are dependent one upon the other, and all must work together for the good of all.

Times have been hard in the South, but out of its disasters there is emerging a South with greater self-reliance, with a better agricultural program, with better agricultural organization for its own protection, and with a better and happier

future. In that happier future we must have through schools and colleges, a still greater diffusion of agricultural knowledge; we must have better organized community effort and community life; and above all, we must have, by Federal and state aid if necessary, a substitution of farm ownership for farm tenantry. . . .

Quoting from Director Barre of the South Carolina Experiment Station: "From an economic standpoint, land constitutes the largest single item of value to the southern farmer. We have in the south approximately 562,130,000 acres of land; fifty-seven per cent of this is in farms and was valued at \$9,000,000,000 in 1925. The buildings, implements, machinery and livestock on these farms are valued at \$4,000,000,000, making the total investment more than \$13,000,000,000, which is



Abandoned land—eroded and deeply gullied. Put to work growing trees, the ground cover would have held the soil in place and such a condition of utter waste could not have come about

twenty-three per cent of the farm property investments in the United States. Thirty-seven per cent of this farm land is considered crop land. This area constitutes thirty per cent of the crop land of the United States. With thirty per cent of the crop land, and twenty-three per cent of the investment in farm property of the country as a whole, and burdened with only seventeen per cent of the total farm mortgaged debt, the South produced in 1925, thirty-nine per cent of the value of all crops, and more than a third of the total agricultural values of the country." We should realize, then, that while we have an exceedingly large area of idle land, our investment in land and our mortgaged debt is



The start of a grass fire in open pine. There is an appalling economic loss to the South annually from the practice of woods burning—a traditional custom followed by uninformed people in the belief that fire improves the grass, kills ticks and works other miracles. To wipe out this wasteful practice and protect the land is a vital necessity

smaller and our return on the investment in farm property is larger than is the case of the United States as a whole. Even if we did not increase the profits from our cultivated land our position would be very greatly strengthened if our

idle lands could be made to pay their share of the taxes and interest on the investment.

Aside from the great opportunity which we have for developing special crops in regions that are peculiarly



A stand of longleaf pine on the Florida National Forest, well protected and flourishing. Next to cotton, timber and timber products bring the South her greatest revenue—this despite the fact that no special effort is now being made to care for the forests or to bring them back on her large areas of cut-over and abandoned lands

adapted to the growth of fruits, vegetables or other intensive crops, probably our greatest asset is the large area of cheap land which can well be utilized for growing trees. A study of the agricultural outlook recently published indicates that the best opportunity for expansion at the present time is in trees and livestock. These lines promise to be profitable when they are properly organized and economically handled.

The South has 400,000,000 acres of land not in cultivation. The best method to lighten the burden of carrying the investment and paying the taxes on this large area of idle land is to put it in forests. Next to cotton, timber and timber products bring our greatest revenue. This is true even at the present time when no special effort is being made to care for our forests or to renew them on the large areas of cut-over and abandoned lands. As the large virgin forests of the North and of the far West are being rapidly consumed, the eyes of the country turn to the South as a future source of timber. Growth studies show that some of our fastest growing species will produce a sawlog in about one-third of the time required by timber trees of the North and West, due chiefly to the longer growing season and heavy rainfall in the South. There are thousands of farmers throughout the South who could not have paid their taxes during the past seven years if it had not been for the small tracts of timber which they have harvested from their farms.

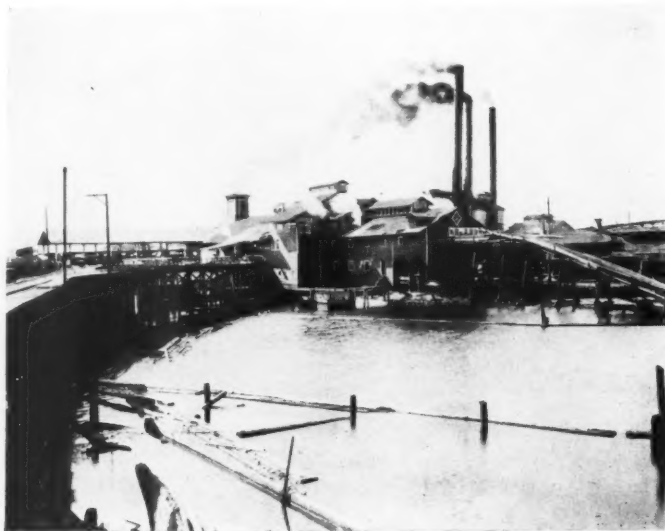
In timber production, just as with cotton and corn, it is necessary to have a complete stand in order to get maximum results. A few scattered trees that we see growing back on the abandoned fields of cut-over lands will never replenish the timber supply of the South. A concerted effort is needed to see that these lands are protected from fire so that they might seed themselves or to seed them artificially so that they might produce profitable returns. In most sections of the South we can count on an annual growth of from 200 to 500 feet board measure an acre. This should produce a gross annual return of \$2.00 an acre. If we apply this to the 300,000,000 or 400,000,000 acres which it seems we will not need for crops or for grazing, we have three-fifths to four-fifths of a billion dollars a year income from this one source.

Let me give you a brief economic analysis of the forestry situation as I see it in the South. "The natural resources of the earth have in all ages and in all countries, for a time

at least, been squandered by man with a wanton disregard for the future and are still being squandered wherever absolute necessity has not forced a more careful utilization." That sentence written by Dr. Fernow, over a score of years ago, summarizes today the past and in part the present history and condition of forest land in the South.

With us it is a question of the proper use of forest land.

Few will deny that our abuse of this resource has been severe. Virtually, without exception, logging practice has been to cut clean, leaving few or no seed trees to provide for restocking and subsequent cuttings. We have been painfully lacking in foresight in this respect, despite the general common knowledge regarding the conspicuous rapidity with which our various species of yellow pine reproduce. Naval stores operations, carried on with deep boxes, wide and numerous faces and heavy chipping, have effected inestimable losses in the South's once vast longleaf and slash



The reconstruction of the waning lumber industry in the South depends upon the restoration of her great pine stands, for the big mills are already migrating to the Gulf and Pacific Northwest regions, following the timber

pine stands through fires and breakage over a long period.

These wasteful practices have persisted for several decades. They still go on. Our cutting methods of today show as yet very little flavor of forest management, or of observation of the silvicultural requirements of the species; we cut to even smaller diameters than previously; we use steam skidders, which are peculiarly destructive of unmerchantable timber; and our yearly damage from forest fires has steadily risen. Some of these forest fires are accidental but many are set either through carelessness or with deliberate intent. Some may wonder at the latter charge, but it is a fact that many farmers in the yellow pine belt believe with the most marked sincerity and tenacity that burning off the woods every year accomplishes one or all of the following points:

Kills boll weevils; makes better forage for cattle; kills snakes and "varmints" of varying degrees of indescribable ferocity.

Naturally, having with us a large body of more or less ignorant, drifting, irresponsible tenant farmers, who hold fast to the foregoing beliefs, we have thousands of forest fires every year. Consequently, the reproduction cannot get under way.

Closely interlocked with the cut-over land problem, we have a naval stores industry which has dwindled to a very small figure. Business shrinkages of this type mean sharp losses of income to the South and to the individual. Only

through restoring our longleaf and slash pine stands can we reconstruct this waning industry. We are also face to face with a steady decline in the number of our permanent sawmills—the most desirable type of lumber manufacturing plant. Our big mills are migrating to the Gulf region and the Pacific northwest. They are following the timber.

Another phase is that of lumber consumption. Due to the influx of portable mills, our annual lumber cut has not yet dropped very appreciably. Our lumber exports show but little fluctuation. We enjoy good trade in the northern markets. But our domestic consumption is rising proportionately with our increase in population and industrial development. And if we persist in our current wasteful practice of timber exploitation, we shall certainly see the day when we shall have to import lumber from some other region where the value of forest conservation has been more fully grasped. Such a materialization will, of course, mean our paying a large freight bill for commodities which we can readily produce at home.

Let me sum up the chief economic consequences of these unbalanced conditions now in existence here. Our millions of acres of idle forest lands are a distinct burden. The presence of such areas obviously decreases property values and increases tax returns. With this there must come an unavoidable and serious loss of income, not only to the individual but to the community and state as well. Many other factors are directly involved. Consider the consequences of a wholesale migration of the large permanent sawmills. A plant of this type, settled in a community, and assured of a steady supply of raw material, carries with it all of the numerous stabilizing, beneficial, economic factors attendant on any established and truly productive industry.

The presence of such plants insures a supply of cheaper lumber and timber for the surrounding community; offers a steady market for the sale of sawlogs from the farm; provides for steady employment, pay rolls, savings accounts and increased purchasing power. All these influences are essential to the development of a flourishing, stable, progressive and wholly desirable type of community. True, such beneficial influences may be derived from some industry other than sawmilling; but where it is possible to grow timber crops so easily on such a short rotation, it seems entirely logical to urge this form of business as the keynote

of the arch. And the growth of such communities offers a market for surplus farm produce—something to be considered in an agricultural region.

Education is the only method of reaching these goals. We cannot legislate conservation into existence overnight. Such lawmaking must be preceded by careful studies, and reiterative presentation of the facts. We need a change in our timber tax laws—a change which will furnish the incentive to grow timber; we should by all means have our own state forestry departments with fire patrol organizations during the dry season. Such departments will render us eligible for substantial federal aid for forest fire prevention and reforestation; and last, we should have enforcement of our existing forest fire laws.

To educate the people of the South to this will take time; but the old Roman senator accomplished the fall of Carthage through unflagging hammering. And so it shall be through our forest lands—by constant, watchful, accurate repetition of the story, shall we put them back at their allotted task of producing valuable, merchantable timber.

In mapping out a platform upon which we should stand or fall in the solution of our forest problems of the South, we must give great consideration to a firmly established, adequately maintained and politics-proof Forest Service for every timber-

producing southern state. Adequate forest fire prevention under the provisions of the Clarke-McNary law, better cutting methods which will provide for successive future crops of timber, retention of our lumber industry and restoration of our naval stores industry to its proper proportions are essential in any program of forestry in the South.

We have millions of acres of cut-over or submarginal lands in the South, practically every foot of which will grow highly valuable timber species. Such productivity can be easily brought about through increased forest fire prevention and better cutting methods.

The two great questions before the South, as I see it, are first, home ownership, which is the basis of all civilization, and second, the intelligent utilization and preservation of our forests, which is an economic necessity. Shall these two important economic questions be settled intelligently or shall the South drift into its new development, accepting what the accidental fates deal out? By taking thought early and constantly the citizens of the South can make this development almost what they will.





NOT so many years ago a friend of mine achieved what seemed at that time an impossible, if not a very daring, thing to do. He motored from San Francisco to my little native hamlet in Virginia. This achievement gave to him an air of wild and imposing grandeur. I was young and ignorant, and I envied him. I coveted his distinction and splendor, but particularly and especially the long, strange journey he had made and the curious new world he had explored. I had never been away from home, and the idea had a seductive charm for me. So, being young and ignorant, I laid my plans.

But it was not until early in May, several years ago, that I put aside my dreams and set forth, with a whimpering dog as companion and bodyguard, to follow the overland trail—think of it. Pretty soon I would be hundreds of miles away on the great plains and deserts, and among the mountains of the far West, and would see Indians and prairie dogs. I might even get hanged or scalped, and have ever such a fine time, and write home and tell all about it, and be a hero. So when my front gate was left behind it seemed as though the heavens and the earth passed away, and the firmament was rolled together in a scroll. I had nothing more to desire; my contentment was complete.

I had been told when a youngster that Providence allows nothing to go by chance; that all things have their uses and their part and proper places in this strange whirligig. I was told that a worm eats dirt—a chicken eats the worm—man eats the chicken—man goes back to dirt—and thus all things are lovely. But I had not crossed the Mississippi River before my suspicion was aroused as to the truth of this, and before the Wyoming line was put behind me, I had positively confirmed my suspicion. The worm still devoured dirt, of course, and the chicken feasted on the worm, but the camper was forced to digest all three. That was as far as it went.



Despite the spitting of my Colt, whole broadsides that let go with a rattling crash, I have yet to hang a "jackass" rabbit over my campfire

Then, too, I was beginning to wonder about the vacation aspect of this pilgrimage. A mule, a plow, and a corn row could not have robbed me more thoroughly of my strength than did the daily cutting of sage brush for fuel and the pursuit of food in the form of that vexing animal known familiarly over two thousand miles of mountain and desert as the "jackass rabbit." He was well named. The treeless landscape of Wyoming was infested with him, and despite the spitting of my Colt, whole broadsides that let go with a rattling crash, I have yet to hang one of these denizens of the sage brush over my fire. It is not putting it too strongly, however, to say that at times the rabbit became a little panicky, and departed at a speed which can only be described as a flash and a vanish.

It might be well to remark right here that this dissertation about the elusive rabbit is entirely in order and appropriate to any discussion of the transcontinental tourist. I have been told that our early pioneers broke the trail West strictly on a diet of jackass rabbits, which may or not explain some of their transgressions. And from the same authority I find solace in the fact that these soldiers of civilization preferred to rope their prey or trample them to death, rather than risk whatever reputation their Colt or rifle had earned them.

But while the rabbit torments the transcontinental motorist with its elusive habits, there is another and more vexing creature of the overland trail; a long, slim and sorry-looking skeleton, with a gray wolf-skin stretched

over it. This homely thing is the coyote, and I speak with confidence when I say that it is not a respectable creature.

My pilgrimage west was settling down to days of alternate tranquillity and turmoil when I first came across this adroit swindler. A living, breathing allegory of Want, he first introduced himself in eastern Wyoming, in the dead of night, with a wail that sent cold shivers racing up my

spine. My suspicion that this new note was entirely out of harmony with the other voices of the wild was confirmed by my dog, who looked up at me with a despairing expression of forsakenness and misery, and a scrawny and ribby shadow that paced restlessly in wide circles around my camp only added to his dejection. Occasionally this furtive and evil thing paused, its face turned to me in a fraudulent smile, and it seemed so spiritless and cowardly that even while its exposed teeth were pretending a threat, the rest of its face was apologizing for it. This filled me entirely full of ambition, but before I could reach for my gun the homely creature abandoned its deceitful trot and developed a livelier interest in its journey. I was pretty well convinced about a coyote's respectability the following morning when I discovered a good portion of my rations strewn over the landscape, and a well-cured ham, purchased at Omaha, among other things missing.

I was forced to replenish my diminishing grub stake, thanks to the coyote, at Bitter Root, a wide place in Wyoming's wide-open places. This little detail, however, caused me particular discomfort, as a stalwart ruffian took offense at my disinclination to pay two-bits for a half-pint of condensed milk.

"What!" I argued, "two-bits for a can of condensed milk?"

"Wal, wha-what do yu' expect, the whole cow? Ger-reat Cæsar's ghost, yu' come swellin' 'round tryin' to raise trouble."

"Why, I didn't come swelling around and I'm not looking for trouble," I informed him. "Only, in the East, one doesn't pay two-bits for a half-pint can of condensed milk."

"Wal, in Wyomin' one does, pard. Wha-whar yu' heading?"

"California. How're the roads?"

The ruffian scratched his head and reflected a moment. "In that vehicle, pard?"

"Sure; it takes you there and brings you back."

Another pause and more reflection. "Wal, I dunno. With ten feet o' snow on th' divide, yu' better swap it fer a hoss."

"Show! In May! Ridiculous! We never have snow in May back East."

"Wal, we do in Wyomin', pard."

When I realized that the grizzled old ruffian was sincere, I was overcome with a special dispensation to throw up the ghost. My patience was at an end; my wrath was boundless, and a malignant scowl covered my face. My Napoleonic feeling of power was rapidly diminishing; I was a dwarf, teeming with a weird and distressful confusion of shreds and fag-ends of illusions.

Here was I, nearly two thousand miles from my own fireside. Westward, somewhere, was California. Between us, in the midst of invisible dangers, was a thing they called the Continental Divide, nestling formidably, and I am told righteously, under ten feet of snow in May.

Somewhere I have heard that in order to know a motor camper one must observe his style. There is something about this assertion that is wholly unaccountable—at least it appears unaccountable. My ruffian friend blandly informed me that in Wyoming when one couldn't go over a mountain they went around it, so I took up the road in a southerly direction. The way of the transcontinental motorist knows no style. His life is one momentous question—what to do next?

Days later I rumbled to a stop on the outskirts of a little Texas town. Wearily I went about preparing my supper, when my attention was arrested by a rather important-looking personage, done up in a five-gallon hat, high boots, and swinging a gun from either hip. He was standing by my car, solemnly regarding me.

"Good evenin', yer Honor," he opened up; "'bout to set down to yu' royal feed, I see."

"Hello, Tom Mix—oh, pardon me, sheriff," I put in hastily, attracted by a glittering star on his buckskin vest. "Won't you join me?"

"Thar air things that air hinderin' me, Mr. Secretary. How did yu' leave the President?"

I was agitated, but he looked so serious that I explained that I wasn't in any way commissioned by the President.

"What? Not a Gov'ment officer? Not even a gov'nor? Then what th' thunder are yu' doin' parkin' yer flivver in th' corporation limits of Wild Hoss, Texas, an' what th' mischief do yu' mean destroyin' th' shrubbery of our city park? Yu're under arrest, stranger, an' it'll cost yu' fifty bucks to stay outta the hoosgow."

"But there is nothing—no signs—to tell me that I was violating your city ordinances. It's an outrage. I'll tell it to the judge."

"Yu're tellin' th' judge now, stranger. An' if it will do yu' any good, yu're tellin' th' chief of police, th' mayor, th' coroner, an' undertaker of Wild Hoss, Texas."

"Then where can an honest camper sleep and eat?" I asked frantically.

"At th' Wild Hoss Tavern—The Home fer Tired Tourists—A Spring in Every Bed. I'm th' proprietor; give yu' a nice sunny room tonight for five bucks. That'll make fifty-five bucks altogether. Drive straight ahead, stranger."

I looked at him speculatively for a moment. "Say, you don't sell half-pint cans of condensed milk for two-bits, do you?"

He returned my look. "They're four-bits in Wild Hoss, stranger."

Eventually I reached Yuma, Arizona, shorn of much of my wordly wealth and my lust for adventure. There was



"What th' thunder are yu' doin' parkin' yer flivver in the city limits of Wild Hoss?" the sheriff wanted to know

no special distinction, I had about decided, in a transcontinental pilgrimage. People didn't sit up nights to greet you, and the brass bands were molding away in livery stables.

For the next week my wanderings were wide and in many directions, and at the end of it all I found myself in the midst of what appeared to be God's green footstool. A miraculous thing had happened to me. I had been suddenly lifted from the desert and placed in a great forest wilderness. There was a ceaseless melancholy in the sighing and complaining foliage of the pines. But I did not mind the melancholy any more than I did the sighing. I was in a state of extraordinary excitement. Here, on every side of me, engulfing me, was wood. No more sage brush for me—here was honest-to-goodness wood for my evening campfire.

Prodigious preparations were made. A hole was dug through the pine needles and pitch-saturated logs were procured. I did myself proud, to say the least; and not since college days have I looked upon a more selective assemblage of wood for the express purpose of burning.

The flames came up obligingly, warm and glowing. I unpacked my bed-roll, spread it out near the fire, and crawled in. I would enjoy a pipe while the flames were at their height, and doze off in their soft twilight. I cannot recall now just when I fell asleep; but the steady yapping of my dog aroused me to an awesome sight. My campfire was reaching out for more fuel, licking at the trunks of many pines, and devouring the tangled undergrowth.

I lay absorbed and motionless, forgetting the danger of the conflagration. I was just beginning to harangue myself over this blundering pilgrimage, to suspect that California was a myth, when a new note was added to the voices of the night. Looking up quickly, I observed a man astride a lathered horse, regarding me curiously.

"Oh, hello!" I greeted. "Wonderful sight, isn't it?"

"How long has it been burning?" he asked coldly.

"Oh, about three hours—perhaps longer." I laughed without restraint, as a humorous thought crossed my mind. "I was just thinking what our volunteer fire department at home would do with a thing like this."

My visitor did not laugh. "How did the fire start?" he asked bluntly.

"From my campfire. I was celebrating——"

"From your campfire?" he interrupted quickly.

"You bet! From my own little campfire."

"Have you a permit to build a campfire?" he asked.

"Don't be funny," I said, beaming with wisdom. "What do you think this is, a city park?"

"This is a Federal forest reserve," he let me know, dismounting. "A permit is necessary for a campfire."

I sensed that all was not well. "But no one has ever told me, and I've never been good at guessing."

The man waved to a gigantic pine, beside which I had placed my bed-roll, and on which was nailed a large placard telling the world that campfires were forbidden without permission from a ranger. Mortification gripped me, and immediately turned to chagrin when the horseman identified himself as a forest ranger.

"Well, I'm glad to know you, Mr. Ranger," I bluffed. "When I get to California I'll send you a postcard."

"When you get where?" he broke in, astonished. "Don't you know you're in California?"

"What! This California?" I shrieked. "This can't be California! Why I haven't seen a single movie star!"

"California, all right. Only you're off the main highway."

My head whirled. My heart bounded into space. I was about at the end of my journey. I couldn't believe it.

"I'm headed for San Francisco. How far is it?"

He pointed to the west. "About three hundred miles."

"Then so long," I cried, jumping up. "I'm off."

The ranger grabbed me. "Hold on! You're under arrest for maliciously setting a fire on a National Forest. You will have to go with me to a magistrate. It'll cost you too, Mister. You motorists must learn that the forests are no place for a Fourth of July celebration."

Words failed me. Another swindle. Dirt, worms and such may have their place in life—but the transcontinental motorist hasn't a chance.

So today, as I hear people from the East go into ecstasies over the romance of the overland road, I wonder if they would sit down with me and reminisce a bit. If I could sit down with them—but perhaps I am prejudiced, for as I write this I am the most sensitive man in America, especially about sitting down with anybody. I have just completed another transcontinental motor trip, and, to tell the truth, I have a delicacy about sitting down at all.



"But no one has ever told me about a campfire permit, and I've never been good at guessing."

The Mount of the Holy Cross

By C. H. VIVIAN

THE National Forests of the United States have been made to serve the people in innumerable ways, thus fulfilling the purpose for which they were established. It is doubtful, however, if the most farseeing pioneers of the forestry movement ever conceived that these areas might some day be used for spiritual advancement. The fact remains, though, that one of them, the Holy Cross National Forest, in Colorado, is likely to become a great outdoor church, in which thousands of devout Christians will each year kneel in prayer.

The possibility of this becoming true lies in the fact that within the forest boundaries is the Mount of the Holy Cross, outstanding among the world's scenic wonders as the only one that portrays on a vast scale the symbol of the Christian religion.

For many years a group of churchmen in Colorado have been urging that a rustic shrine be erected before the cross, and that annual pilgrimages be made there for devotionals. The idea has been given great support, but the inaccessibility of the mountain has delayed realization of the plans.

This year more than 1,000 persons will make a week's visitation to the region.

Many of the group will be religious workers, intent upon viewing the cross and the site that has been tentatively selected for the shrine. The trip will also be in the nature of a recreational outing and a nature-study tour. These aspects of the undertaking will attract members of the Boy Scouts, Camp Fire Girls and various church organizations.

Dr. O. W. Randall, of Eagle, Colorado, one of the original sponsors of the shrine idea, will lead the party. Forest rangers will be in charge and will supervise the various side trips to forest areas that lend appeal.

The starting point will be Eagle, which is the closest railroad point to the mountain. From there, six and one-half miles of steadily climbing trail must be negotiated on foot. All bedding, food, and supplies will be transported by pack train.

Camp will be established on Notch Mountain, directly facing the cross and separated from the mount by a deep and steeply walled valley. It is near this camp site that it is proposed to raise the shrine of native stone. The spot chosen is in the center of a saucerlike depression, which is, in effect, a vast natural amphitheater that will accommodate 100,000 people.

The Mount of the Holy Cross has been viewed by comparatively



The Mount of the Holy Cross, the natural spectacle which has filled thousands with awe and inspired many religious legends. The elevation is 13,978 feet and few people have seen it at close hand. This photograph by the official photographer of the Hayden Survey was made in 1876 and still remains the best likeness ever recorded by the lens. The snowbank at the right is called "The Adoring Virgin" because of its striking likeness to a kneeling woman

few people. The cross itself is not visible from any present railroad or highway, although the tip of the mount may be seen from one or two points on the Pikes Peak Ocean-to-Ocean Highway. The cross is obscured from view by Notch Mountain, which gains its name from the fact that it is marked at one point by a notchlike depression. From a certain angle of vision, it is possible to look through this gap at the upper portion of the cross. Seemingly, the entire crucifix is revealed, but this is an optical illusion. The lower portion is in reality a streak of snow on Notch Mountain that lines up exactly with the stem of the real cross. Most pictures purporting to be of the cross depict this composite spectacle. The vertical member of the real cross turns slightly to the right at its base, while nearly all the pictures show it turning to the left.

The Mount of the Holy Cross is 13,978 feet above sea level. It is in the loftiest section of the Colorado Rockies. Only a few miles away, overlooking the mining town of Leadville, are the two highest peaks in the state—Mt. Elbert and Mt. Massive.

The crucifix is done on a rather vast scale. It stands nearly half a mile high and is approximately 1,000 feet across the arm. It owes its origin to the fact that two veins of hematite iron ore reach the surface in the form of a cross. In past geologic eras the relative softness of these mineral streaks as compared to the rock that incloses them has resulted in their being eroded to a depth of several feet, producing furrows that outline the cross.

The accumulation of winter snows covers the entire peak and the fissures are drifted full. Each summer the sun melts the shallower snow surrounding the cross, leaving the deeper drifts that form its outline standing in bold relief against the brown background. The cross is viewed at its best during June, July, and August.

The National Forest area surrounding the peak is one of scenic grandeur constituting a paradise for the hiker, sportsman, or camper. Trout streams derive their clear, cold water direct from eternal snowbanks, and there are scores of lakes dotting the flower-covered alpine valleys.

The churchmen who championed the idea of a shrine several years ago formed the Holy Cross Association to promote the plan. It is proposed to raise the necessary funds by popular subscription, and to that end the association has broadcast the general features of the undertaking.

Through the efforts of the organization, the Government was prevailed upon to set aside 10,000 acres within the forest reserve as a park area, to be dedicated to religious, educational, and recreational uses. Another of the association's accomplishments has been a successful campaign for a highway from Denver across the Continental Divide to the Holy Cross region. This road, partially built, will approach no nearer than fifteen miles to the cross, but will attain the necessary elevation to give motorists a clear vision of the spectacle. It will also shorten by many hours the time required to reach the cross from Denver.

It is the proposal that the visitations be made each year on dates of especial significance in religious history. The principal ceremonial is suggested for July 16, which is observed in the Catholic Church as the Feast of Exaltation.

It marks the anniversary of the victory of the cross over the crescent sixteen centuries ago.

The history of Christianity has likewise been drawn upon in naming the more important scenic features in the region. The largest of the lakes has been christened Constantine in honor of the Roman emperor who triumphed in the vision of the cross. A near-by cataract of rare beauty bears the title of Helena Falls, after Constantine's mother, who is reputed to have found the true cross near Jerusalem.

The Mount of the Holy Cross is rich in legendary literature. From Indian folklore and from the records of the Spanish conquistadores, who were the first white men to behold the cross, there have come down tales of the supernatural creation of the symbol. Practically all of these accounts relate that the cross was etched by a higher being to mark through eternity the final resting place of one who was forgiven his sins on the spot, after centuries of aimless roving over the face of the earth in expiation of his misdeeds. The theory is advanced that the mount was isolated by design in order that he who sleeps at the foot of the cross shall never be disturbed.

One of these legends was the basis of Eugene Field's story of Don Escleador, Father Miguel, and the Wandering Jew.

The following is typical of the many existing apocryphal explanations of the formation of the hoary token:

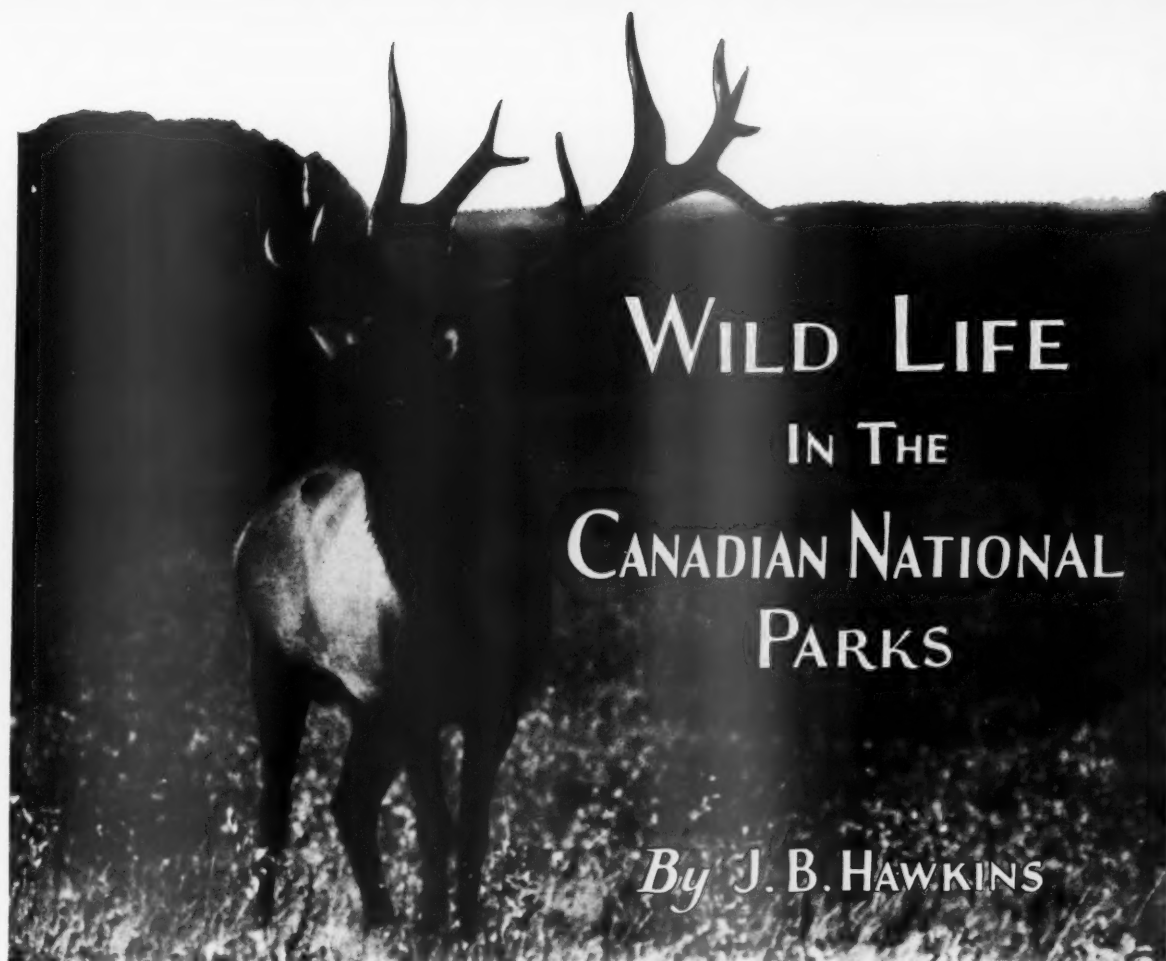
Many years ago, when Franciscan friars were earnestly engaged in the great work of converting the inhabitants of Mexico to the worship of God, a monk in Spain yielded to the tempter and committed an unpardonable sin. It was revealed to him in a vision that when he saw a cross suspended in the air it would be a token of his forgiveness. Then he became filled with the spirit of unrest and longed to travel. He joined an expedition to Mexico and wandered over that country in search of the sacred symbol until his hair was frosted and his limbs were infirm with age. Finding no peace for his soul, he joined an exploring party starting north. By winding ways they traveled; from mountain summits where sunshine lingered to valleys barred with light and shadows. Through deep defiles robed in verdure, girdled with flowers, and crowned with snow they went onward.

Arriving one day at the top of a lofty mountain, they pitched their tents. It was not the hour to camp, but further progress was prevented by a dense fog. With the coming of the next morning's sun the vapory film rose from the ground and spread to a union with the clouds, forming a canopy that enveloped the entire earth.

The pious man wandered away from the sound of human voices to pray for the removal of his burden of sin. Kneeling in deep humility, he raised his hands and his voice to God when, lo! the cloud was lifted and there, suspended before him, resplendent with the rays of the glorious sun, was the cross.

The Great Spirit of the Mountains breathed forgiveness and a soul was liberated in joy.

Wondering at his extended absence, the companions of the wanderer went to search for him. They found him dead in the attitude of prayer, his face lifted upward toward the Mount of the Holy Cross.



WILD LIFE IN THE CANADIAN NATIONAL PARKS

By J. B. HAWKINS

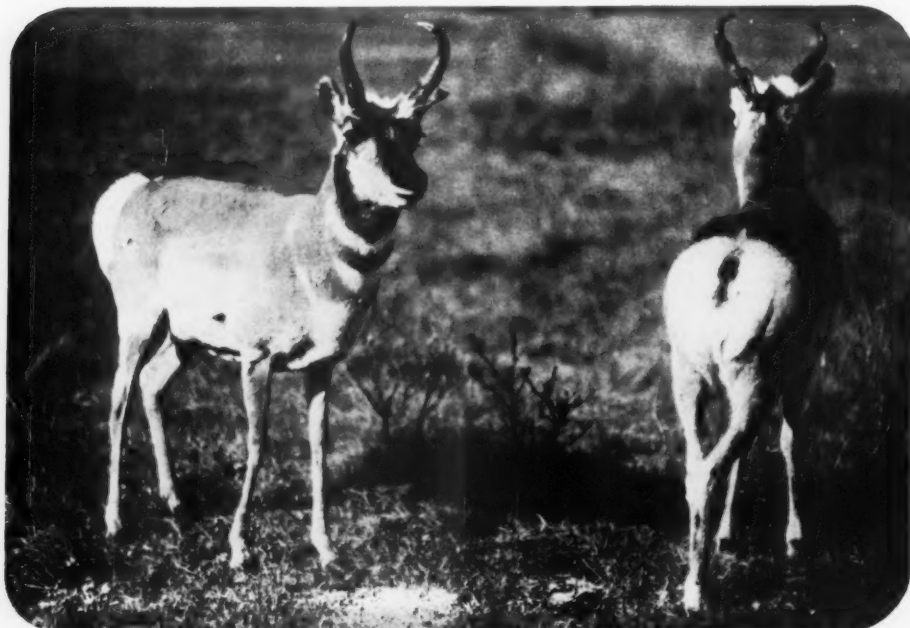
The Development of Recreational Areas as Game Sanctuaries Is Restoring to the Northern Dominion Its Mammalian Wild Life

CANADA has eighteen National Parks under the jurisdiction of the Department of the Interior, comprising a total area of approximately eleven thousand square miles. While the primary purpose of their establishment was for the preservation of the pristine character of the country and for their service as recreational areas, all of the National Parks are game sanctuaries, where hunting and trapping are forbidden, and no unsealed gun may be taken into any park.

Years ago it was recognized that Canada was becoming the last great habitat of wild life, particularly big game, on the North American continent. It was realized that if such game were to be preserved selected tracts of land would have to be set aside, where the fauna would be unmolested and allowed to increase under natural conditions. Thus the National Park areas were designated game sanctuaries, and conservation of wild life was stringently practiced. The result of this is that certain species of mammals which were in grave danger of extirpation are today rapidly increasing.

The areas surrounding the parks are also becoming repopulated from the natural overflow.

Due to the fact that Canada is a country of vast proportions and also for the reason that most of the National Parks are either in the Rocky or Selkirk Mountains—non-agricultural and unsettled parts of the country—the problem of confining in them large game animals has not arisen. Indeed, the overflow has been something to delight the hunter, for these parks are unfenced, and hunting is allowed outside the parks. The conditions are, however, different on the prairies, where certain indigenous species are protected in animal parks and have of necessity to be confined within fenced enclosures. Buffalo National Park, near Wainwright, Alberta, is an immense fenced reserve with an area of 162 square miles. Fencing here was necessary for two reasons: the migratory proclivities of the plains buffalo necessitated an inclosure to keep them from roaming over the prairies and so probably destroying crops in their peregrinations; also, the rigid protection which was necessary to provide for the nucleus of the



The antelope, among the fastest of game animals, roam at will in the Buffalo National Park, for all of the Canadian National Parks are game sanctuaries, where hunting and trapping are forbidden and into which no unsealed gun may be taken

present herd demanded that they be kept within an inclosure for control and observation and to prevent poaching. For similar reasons it was found necessary to fence in the increasing herd in the Nemiskian Antelope Reserve in Alberta.

Of the large game animals in America, the American bison, or, as it is popularly named, the buffalo, was probably the most numerous in the history of modern man. This large mammal (*Bison bison bison* Linnæus) once roamed the continent in countless numbers—indeed, so great was the number that its extinction was thought impossible—yet in the course of seventy-five years the species was almost exterminated.

In 1907 the Canadian Government purchased a large herd in America, containing 716 buffalo, and placed them in great fenced inclosures on the prairies of western Canada. Today this small original herd numbers more than

5,000 and one park alone now contains 4,300 pure-bred bison, although several thousand have been slaughtered to insure sufficient grazing area for the remainder and to retain the proper relation between the sexes and weed out the aged and infirm. Several thousand others have been released in the Wood Buffalo Park established in the great open country near Fort Smith, in northern Alberta. The American bison now appears to be safe from extinction in Canada.

The wapiti, or elk (*Cervus canadensis* Erxleben), was once as abundant as the buffalo

and had an even wider range, but escaped the slaughter, although its numbers were decimated. This is shown by the enormous decrease in its range. In October, 1899, the Dominion Government took its first active steps for the protection of this animal by purchasing four males and one female



A young cattalo, an interesting resident of the Buffalo National Park at Wainwright, in Alberta. He is half buffalo and half domestic cow and is just five months old



Beautiful Jamieson Lake, in the Buffalo National Park. This immense reserve of one hundred and sixty-two square miles has been fenced for the protection of the animals because of their tendency to roam on the prairie destroying crops, and also for purposes of scientific observation

for Rocky Mountain National Park. By 1909 these five had increased to thirteen head. The National Parks, when first reserved, nearly all contained some specimens of these animals, although their numbers were never accurately known. The regions around Jasper and Rocky Mountain Parks were once widely known as the best elk hunting grounds in Canada, a statement which is borne out by the enormous numbers of antlers and skulls found. So that in 1919, and later, when the Government had the opportunity

of restocking the National Parks with a number of animals generously donated by the United States Government from the Yellowstone Park herds, these two parks were chosen as the most suitable habitat for the imported animals. Nearly three hundred of these magnificent wapiti were freed in these two Canadian National Parks, and in the seven years have increased to approximately 4,000. There were a number of native elk present when the imported animals were introduced, and reports from wardens and rangers state that

(Continued on page 493)



In 1907 the Canadian Government purchased in America a herd of 716 buffalo and put them under fenced protection on the western prairies. This photograph shows part of the main herd, now numbering over 5,000

A Log for Fishermen

The Bay State Invites the Angler

By E. C. FEARNOW

MASSACHUSETTS has from the beginning possessed important fisheries, and had it not been for this valuable natural asset the Puritan fathers would never have been able to establish themselves in that region. When other supplies failed, the water could be depended upon to furnish the food essential for existence. The bays and inlets of salt water were teeming with the marine and anadromous species and the streams and lakes were filled with trout, pickerel and perch. It is not surprising that there would be a plenteous supply of fish in a country inhabited by a few Indians who took only what were needed for their immediate needs and had no method of canning and shipping fish to distant points. We find today that Massachusetts, a state of a little over 8,000 square miles, sustains a population of over four and one-quarter millions. This state with only fourteen counties, not as large as Maryland, one-third as large as West Virginia, and one-fifth as large as the State of Pennsylvania, has many varieties of fish, including fresh-water, anadromous and marine species. There is fishing for all classes and conditions of men, commercial fishing and angling.

While commercial fishing is incidental to the purpose of this article which has to do with fishing in inland waters, or angling, it may not be amiss to state that during the year 1926 fishing vessels landed at Boston 167,317,826 pounds of fish valued at \$7,002,602, and at Gloucester 54,900,824 pounds valued at \$1,490,211, an increase of approximately ten per cent in quantity and nearly twelve per cent in value over the preceding year. The principal species landed at Boston and Gloucester were halibut, cod, haddock, hake, cusk and mackerel.

The angler, however, is chiefly interested in large-mouth

and small-mouth black bass, rainbow and lake trout, yellow perch, crappie and bream. The state is well watered and suitable for many varieties of game fish. According to the Rand-McNally Atlas there are in the state sixty-seven lakes and reservoirs, 106 rivers, and 114 brooks. When we consider the area of Massachusetts, the dense population and

the large number of persons interested in fishing, it is remarkable that well-stocked streams are still to be found. To show that

Miles Standish and his contemporaries did not get all the fish, the United States Bureau of Fisheries recently compiled a report of Massachusetts waters stocked by the Bureau during the period from 1917 to 1921.

According to the report, the outstanding small-mouth black bass waters in Massachusetts are Deerfield River, Shelbourne Falls; Edgartown Great Pond, Edgartown; Naukeag Lake, Ashburnham; and Stockbridge Lake, Lenox. The best waters for large-mouth black

bass are given as Hart Pond, Lowell; Mares Pond, Falmouth; Merrimack River, Lowell; Nabnasset Pond, Lowell, and Sandisfield Lake, Winsted. Excellent brook trout are found in Allen Pond, Springfield; Bear Mountain Brook, South Lee; Burleigh Brook, Palmer; Cady Brook, Dalton; Clark Brook, Pittsfield; Green River, Great Barrington; Manhan River, Westfield; Mountain Brook, Monterey; Mountain Pond, Greenfield; Roaring Brook, Great Barrington; Sackett Brook, Pittsfield; Seekonk River, Great Barrington; Shaw Brook, Northampton; Silver Brook Pond, North Dana; and Wood Brook, New Bedford. The best rainbow trout waters are Forge Pond, Lowell; Long Pond, Lowell; Long-Sought-for-Pond, Lowell; and Williams River, Great Barrington. The best perch locations are Merrimack River, Lowell, and Punkatasset Pond, Concord.



"Then weary is the street parade,
And weary books,
And weary trade:
I'm only wishing to go a'fishing."



When Forest Fires Began

By WILLIAM T. COX

Director, Upper Mississippi Wild Life Refuge

IT IS commonly assumed that forest fires have always been prevalent in America. The evidence is to the contrary, and the explanation does not rest with climate.

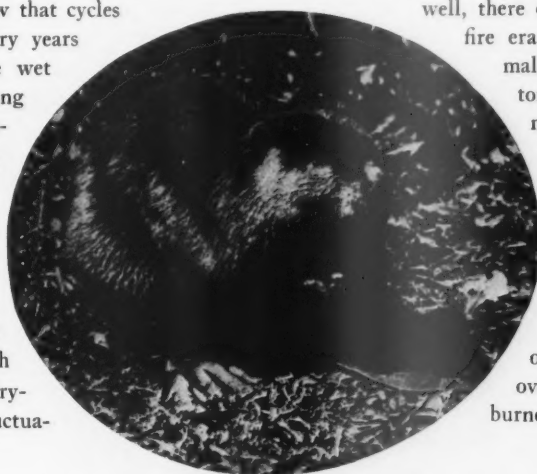
Students of meteorology can show that cycles of wet years follow cycles of dry years with some regularity, but these wet and dry periods are not of long duration. There would be a number of them, for instance, within a single century. Each cycle of dry years, without doubt, means an increase in the number and severity of forest fires, and each wet cycle gives to the woodlands more or less immunity from their arch enemy. While the wet and dry-weather periods account for a fluctuation in the fire hazard and this is most clearly shown during the past fifty years, they do not explain the comparative freedom from fire which the forest seems to have enjoyed previous to dates roughly approximating the earliest exploitation of different regions by the restless white traders.

To one who has studied the northern forest from Maine

to Minnesota and northern Saskatchewan, and who has canoed, and mushed, and ridden through the vast pine and spruce regions of Canada, and flown over them as

well, there comes the conception of a forest-fire era. Biological studies of the animal life of the forest added to the history of the fur trade give some meaning to the age of timber stands revealed to the forester across two thousand miles of the continent.

The pine and spruce forests were not always the plaything of the fire demon. Before the white man came, fires occurred, but they rarely extended over large areas. Most of them burned only "holes in the forest," or, at worst, what might be considered small patches in the vast, green expanse of the pineries or the darker and denser region of spruce



The modern demand for furs so stimulated the extermination of the busy little beaver, that the forest lost one of its chief protectors

spreading out over the vast lands to the northward.

The early explorers—Champlain, Nicollet, Hennepin—found few far-reaching burns or deadenings in the timber region. MacKenzie and other forerunners and advance

agents of the Hudson's Bay Company comment on the limitless stretches of unbroken forest. That was before the halcyon days of the fur trade; before Nature's balance was upset by the wiping out of a numerous, busy, furry tribe that had long been the friend and protector of great forest areas.

It is more than coincidence, it seems to me, that the coming of large and devastating fires in the woods dates back to the time shortly following the disappearance of the beaver. This seems to be true throughout the north country and east of the Rocky Mountains. Across the face of the continent one may read the scars of these fires. Only pitifully small patches of the old, old forest remain. It had been sadly reduced even at the time the lumberman invaded the woods. Most of the great fires occurred long before the actual occupation of the regions by settlers. In my judgment, it was not due solely or principally to the careless use of fire by the trappers and voyageurs. Rather was it a natural consequence of the drying up of the woodlands, which for centuries without number had been kept moist through the activity of the

beaver. These busy animals held back the water in ponds and flowage areas by means of dams on every stream they could control, even to the source of the tiniest creeks.

Immediately after the beaver's disappearance, which left the country drier than it had been for a thousand years, conditions became exceedingly dangerous. Continuous forests extended for hundreds of miles. Fires originating from lightning, spontaneous combustion, or camp fires of Indian or trapper, then, for the first time, had abundant opportunity to spread and travel unchecked until, driven by in-

auspicious gales, they swept over whole districts. Sometimes they burned for months, eating their way through mile on mile of virgin timber, devastating areas half as large as a state.

The woodsman who knows the beaver, who has traveled through favored districts again stocked with these animals, while he may curse them for flooding trail and portage,

will admit that they render the forest almost safe from fire. The feature that counts so strongly for safety is that fires cannot run far in a beaver country until they encounter streams well filled, flooded areas or lakes full to the bank. Under such conditions it is little short of impossible for a serious forest fire to develop. Foresters have learned that wide-sweeping and devastating fires in other than mountainous country do not spring into existence in an hour. More often they run or creep along for days before attaining proportions that, with a high wind, may spell destruction to a whole community. It is this fact that makes it possible through expensive patrol and prompt and savage fighting to control forest fires in most regions today.

In the days of the beaver few large fires developed. On his work alone depended the safety of the forest. Apparently it was safer then than it is today, even with our patrol and fire-fighting crews, though, of course, the presence of an industrious and cigarette-smoking population accounts for much of the increased danger.

We were slow to realize the close relationship between insect depredations and forest fires—something that has been clearly brought home to us by the work of the spruce bud worm in recent times. There seems to be an equally close relationship between the presence of large numbers of



The great beaver dam at Itaska Lake. By building such structures on every stream they could control, these little animals held back the water in ponds and flowage areas. The author contends that an era of forest fire followed the disappearance of the beaver, and the subsequent drying up of the woodland, which for centuries had been kept moist through the untiring activities of this numerous, furry tribe

beavers and safety from fires. The beavers' work, indeed, may tend to keep a forest more thrifty and more resistant to insect attack, and thus indirectly, as well as directly, safeguard the woods from fire.

I am convinced that in the beaver the forest has a friend that has been much underrated. Even foresters have failed to appreciate the full value and purpose of this animal, which can and should be made a profitable by-product in the management of all northern forests. The beaver pelt has long been the standard fur. But more important even

than the value of his pelt will be the service rendered by the beaver in improving the waters for trout and other fishes and in protecting the forests from fire.

So the era of forest fires dates from the practical extermination of beavers and extends down to the present day. In my judgment, it will terminate as soon as the northern forests are again fully stocked with beavers and given a reasonable measure of additional protection through patrol and fire-fighting crews to offset the dangers brought in by civilized man.



LOVELY LAKE TAHOE IN CALIFORNIA

THE MOUNTAIN'S BRIDE

By HELEN S. STURGES

There lived a Maiden in the sky,
Wooded by a Mountain proud and high;
The Maiden's eyes and gown were blue,
The stars danced in her retinue;

She listened to her lover's plea—
She knew his power and majesty.
At last, sweet, yielding, down she came;
"Tahoe" he called his sweetheart's name.

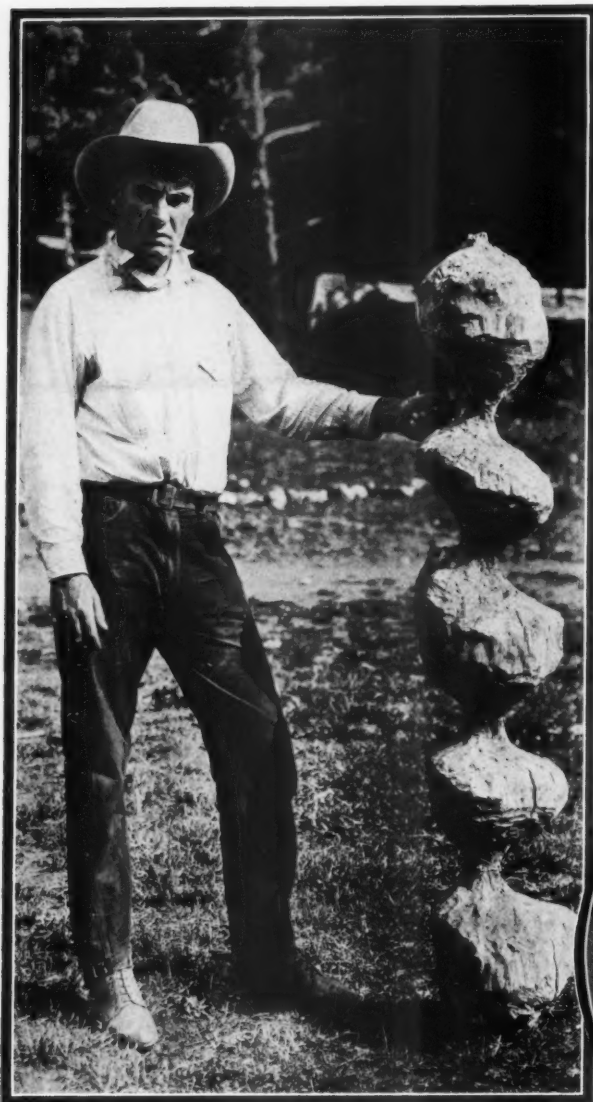
Fine, shimmering silks she brought to wear,
With pearl and sapphire for her hair.
Then, looking down far, far below,
She saw the gifts he would bestow—

A turquoise palace, silver fair,
With courts of crystal, blue and rare;
The walls of amethyst and rose,
Where wavering sunlight comes and goes;

A ring of emerald for her hand,
By zephyr maidens she was fanned;
Fine, scented woods of pine and spruce
He gave her, for her dainty use.

In gratitude she looked above
To thank the Mountain for his love—
He saw himself, so great and wise,
Forever mirrored in her eyes!

On AND OFF



B. L. Brown

A remarkable beaver cutting found near Livingston, Montana. Note the uniformity in the work of this little forest animal

Lone Oak Park, smallest park in the world, at Visalia, California. It is six feet wide and nine feet long

E. A. Brininstool



William Thompson

Near Cevennes du Tarn, France, is one of Nature's queerest creations, Goose Rock, famous throughout Europe

O. R. Jaeger



Cataract, hearty bear cub, accompanied the United States Geological Survey exploration party through the Grand Canyon

Fungus growth of unusual size and form growing from the stump of an old poplar tree near Belvidere, Illinois.

John W. Weber



THE TRAIL



William Thompson

Another unique and celebrated rock of the Old World. Peyro Clabado, on the famous Plateau of Sidobre, in France

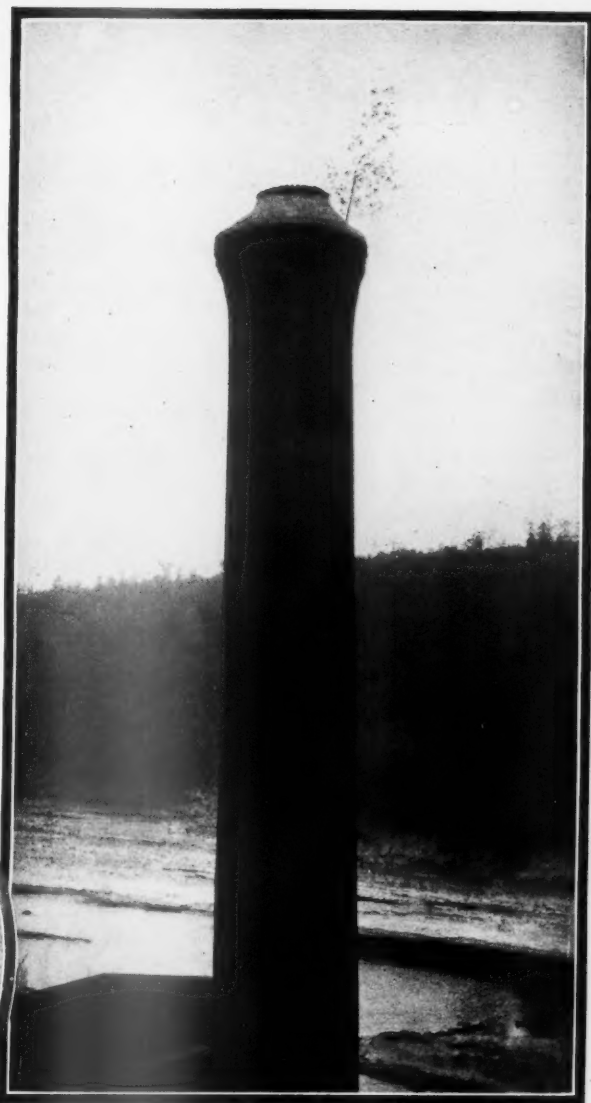
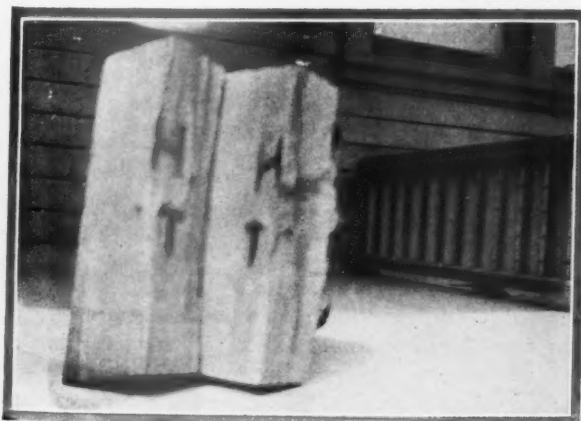
J. W. Humphrey

Tame enough now, but wait. Hybrid lambs, a cross between the Big Horn and a domestic sheep, on a ranch near Manti, Utah



A log split near San Bernardino, California, revealed these initials, possibly the record of an old romance

M. E. Buxton



Thomas W. Bean

Tree growing on top of a 112-foot brick chimney at Turners Falls, Massachusetts. The tree is twelve feet high and healthy

Three trees, two roots and one stump, form this unique combination on the outskirts of Chicago, Illinois. Figure it out

C. O. Nelson



Fire Towers and Recreation

North Carolina Dresses Up Her Lookout Towers For the Public

By W. C. McCORMICK

EVER since forestry has developed from a rather fanciful theory into a very tangible and practicable thing, many people have evidenced great interest in its working, but it is, for the most part, a melange of mystery to them. Their conception of the process of development is vague; they have no mental picture of really what goes on in the forests. Realizing this, modern foresters are unveiling their effective machines so that the public may see just how they work. Wherever this has been done on a reasonable scale the foresters have been rewarded by greater public appreciation and understanding, which rapidly brings about the one thing so necessary to their efforts, whole-hearted public co-operation.

One of the most recent developments in this respect has been the beautification of forest fire lookout towers, and the exploitation of their vicinity as recreational areas. Experiments carried out by the North Carolina Department of Conservation and Development have convinced State foresters and fire wardens that the educational value of this development is almost equal to their value as a medium of reducing the number of fires in the State. Funds expended in beautifying the fire tower sites and making them accessible to the public by means of roads and

trails are looked upon as a very good investment.

Many of the fire towers in North Carolina under State maintenance are located near highways. Under the new plan, good automobile roads link the towers with the main highways, and huge signs invite the motorist to use the site for recreational purposes. Human curiosity plus an opportunity to view the surrounding country from so high a point has brought thousands to the lookout towers where they have explained to them while picnicking the mysteries of fire detection, and, incidentally, the cause of most fires and the folly of carelessness in the woods.

The towers themselves have been dressed up. A circular plot is laid out surrounding the tower and posts are set at regular intervals. Back of each of these posts long-leaf pines are set out, while the area within the circle is planted to carpet grass. A register is provided for visitors who are also encouraged to take away with them a

supply of literature dealing with the forests of the Nation and State.

The site is cleared of all inflammable material, trees are trimmed and suitable parking space provided for automobiles. Tables are provided for picnickers, and metal containers are on hand to care for paper and cans.

Of course, many of the towers in the State are not as accessible to the public, due to their isolation from the main highways, but even those deep in the woods will eventually become recreational spots because of the great influence they exert in educating the interested public to what really goes on in the realm of the forester.



The Fire Tower Invites the Public—One of the most important late developments in forest protection work is the beautifying of the vicinity of fire towers and making them accessible to motorists as recreation areas. Small desks near the foot of the tower, like this one, filled with forest literature, are provided for the registration of visitors.





EDITORIAL

Conservation Planks

CONSERVATION as written into the platforms of the two major political parties last month make brief reading. The Republican party states its stand on the conservation of natural resources in two hundred and thirty words; the Democratic party in one hundred words. Such brief handling leaves the reader in considerable doubt as to how the two parties stand on some of the larger problems of conservation.

This is pointedly true of the Democratic plank. While it commits the party to "conserve the natural resources of our country for the benefit of the people and to protect them against waste and monopolization," and declares that our disappearing resources of timber call for a national policy of reforestation, it contains no elaboration of the specific policies to be advocated. It sounds a note, however, that will be alarming to many when it states: "The Federal Government should improve and develop its public lands so that they may go into private ownership and become subject to taxation for the support of the States wherein they exist."

What the framers of this pronouncement have in mind is not clear. Much depends upon the interpretation of the phrase "public lands." All of the lands owned by the Federal Government are public lands in the sense that they belong to the public. In the aggregate they amount to the staggering total of three hundred and fifty million acres, of which one hundred and sixty-five million acres have been undergoing improvement and development by the Federal Government for the past ten to twenty years. These are lands withdrawn from public entry in the form of national forests, national parks, national monuments, game refuges, military reservations, and other uses designed to promote the national welfare. Does the Democratic party hold that public lands of this character should eventually pass to private ownership in order to provide taxes for the States?

Although a partisan of State's rights, Grover Cleveland, a Democratic president, it will be recalled, created the first Federal forest reserves. It is hardly believable that the Democratic leaders now mean to advocate that the National Forests and the National Parks should eventually pass into private ownership or even be turned over to the States in which they are located. Such a proposal would raise a national protest from which might emerge a dominating issue in the coming election. It seems more likely that the statement refers to the public domain—those lands owned by the Federal Government which are still open to entry under existing land laws. Here, in fact, is a tre-

mendous conservation problem. The public domain aggregates almost two hundred million acres. It is the unclaimed and unappropriated remnants of the nation's original public lands, which remain vacant because, by and large, they are too poor to warrant entry or attract private ownership. Frequently referred to as "no man's land," they are in varying stages of neglect and depletion, and without constructive control or regulation by the Federal Government. Millions upon millions of acres of these lands have been all but ruined by unrestrained grazing and uncontrolled fires.

If the Democratic party proposes to regulate the use of these vast areas and husband their resources of forage and timber, it will indeed perform a highly constructive and much needed national service. The theory that they should be improved and developed by the Federal Government so as to become attractive to private ownership is, however, open to question. Laws so far enacted seeking to encourage disposal of these lands as enlarged grazing or agricultural units have not been successful. Because of their low value, their profitable management and development call for handling in large units, and this can best be done by the Federal Government in the same way that it is improving and developing the range and forest lands within the National Forests. The Democrats' expression of interest in this problem—one of the most important in the field of Federal conservation today—seems too vague to permit clear understanding or intelligent acceptance. It would be exceedingly helpful if the party leaders would clarify in definite terms the policy which the party has in mind.

The Republican platform, relating to conservation, expresses belief "in the practical application of the conservation principle by the wise development of our natural resources." It goes on to state that "the measure of development is our national requirement and avoidance of waste so that future generations may share in this natural wealth." It declares against monopolies in the control and utilization of natural resources and as example of its conservation policy cites the mineral leasing law, classification and appraisal of public lands according to mineral values, the creation of an oil conservation board, and passage of the Federal water power act. No mention is made of forest policies or of the attitude of the party toward the long-standing problem of the public domain. Less generalization and clearer enunciation of specific conservation policies are much to be desired in both party platforms.

A Notable Undertaking

THE American Forestry Association, in partnership with the state forestry agencies of Florida, Georgia, and Mississippi, has just launched one of the most important forestry educational enterprises thus far undertaken in America. This project is nothing less than a three-year campaign to convert the rural population of these great states from the destructive and impoverishing habit of woods-burning to the constructive and enriching habit of forest protection. Armed with a war-chest of \$150,000 and the promise of much additional cooperation, the Association and its allies will invade the very heart of the woods-burning country of the South. Their errand, however, is a purely peaceful one. By word of mouth, by pictures and pamphlets, posters and movies, lectures and news items—in short, by all the arts of personal contact, persuasion, and publicity—the missionaries of this movement will undertake their task of conversion.

It is no easy task, but the rewards will be proportionate to its difficulty. The southern pines are among the best timber trees in the world. Nowhere are there better forest-producing soils than in the great "piney woods" region; nowhere is forest reproduction more prolific; nowhere is timber growing more vitally important to the building up of rural prosperity. Yet nowhere is the vice of woods-burning more deeply ingrained in prejudice, superstition, and ignorance. These country people have gone on generation after generation burning over the woods each spring to "green" the grass, to kill the ticks, to perform any number of miraculous and imaginary benefits. They are blandly unaware that these same fires kill the goose that lays the golden egg. For they destroy the young and middle-aged trees, seriously injure mature saw-timber and turpentine trees, and by a slow and insidious process of attrition destroy the forest as a growing, producing organism. But it is very difficult to convince these people of the evils of woods-burning, for one of the many idiosyncrasies of forest fires is that they themselves consume much of the evidence of their destructiveness. And living somewhat out of the current of modern thought and life, these rural people are more than ordinarily steeped in ancestral customs.

Now, it is hard to change the ingrained habits of adults anywhere. It is particularly difficult where these habits are entrenched in tradition and life-long custom. Consequently, this campaign is going to give particular attention to children. But the work will, by no means, be exclusively directed to the young, for the adult population can and must be reached

if the campaign is to have an immediate effect in reducing forest fires. Traveling through the rural regions in specially equipped trucks, the "forest missionaries" engaged in this campaign will make a special point of visiting the rural schools, where they will give talks, show lantern slides and films, and provide the teachers with charts, pamphlets, posters, and other teaching material. At the same time, the adult population will be reached through meetings at school houses and churches, through the press, and it is hoped through the interest and activity of the leading people of each community. In the course of three years, a vast number of people will be reached with the message of forest protection; a large number of active volunteer workers will have been energized, and, unless all calculations are in error, a marked decrease in forest fires will have occurred.

The problem of converting this population to new habits and outlooks presents an interesting challenge to the efficacy and skill of the educational program of the forestry movement. In accepting the challenge, the Association and its cooperators have no illusions as to the difficulty of the enterprise. But, likewise, they realize its large importance. The betterment of the rural population—though in itself important—is only one of the stakes of the project. The wide-sweeping fires of the region make timber growing difficult and risky as an industrial or agricultural enterprise. Timberland owners hesitate to make investments in woodland improvement and management if their work may be swept away, without warning and without redress, by the match of the irresponsible woods-burner. And the woods-burner makes no distinction whatever, in the matter of fire, between "mine" and "thine."

Laws alone are powerless to break such habits and viewpoints. Education must reinforce the law by appealing to the common sense and the consciences of these people. In undertaking this task of conversion, The American Forestry Association and its collaborators hope to make this great piney woods region safe for forestry. In so doing, they have the vision of ultimately giving the region its rightful rank as one of the nation's greatest storehouses of growing timber. And incidentally they hope to develop new methods of popular forestry education by which we can more easily achieve that *sine qua non* of forestry—the creation of a genuine "forest consciousness" among the owners, users, dwellers, workers, and harvesters of our forests.

Minnesota's Forest Issue

IN Minnesota, whose pineries were once among the noblest forests of North America, the public is witnessing a battle over the administration of forest lands still the property of the State. Stripped to its essentials, the controversy appears to be the old struggle between public and private interests in the exploitation of the State's forests. Of its original grants, Minnesota still retains in State ownership some two million acres of forest land estimated to contain two and a quarter billion feet of timber, or one-third of all the re-

maining timber in the State. The State Government is thus the largest single forest owner in Minnesota. It is natural that the people of the State should look to the State Government for leadership in the constructive handling of its forest lands.

In actual practice, however, Minnesota appears to be a bear in the timber market. Its traditional policy is to sell. Not so long ago, if we recall rightly, this policy was defended by some of the State officers on the grounds that

the land needed to be cleared for agriculture. Now that the amount of rough land in the State available for agricultural settlement far exceeds the demand, that defense appears to have been abandoned. Foresters in the State familiar with local conditions claim that the State is continuing to sell off its timber without any provision for its replacement and far in excess of possible growth, even under conservative methods of lumbering. On January 1, 1928, it is said, the State had contracted for the sale of two hundred million feet of timber, or nearly ten times the possible growth.

Minnesota's administrative machinery has been fashioned to perpetuate this policy of disposing of its remaining forests. The law lodges in the State Auditor authority to make and supervise the sale of timber from state-owned forest lands. The State Forester has charge of fire protection, but no legal authority over the State's timber sales, or the disposal of the timber, excepting for an indefinite obligation to cooperate with the State Auditor. Cooperation between the two officers has apparently not been working smoothly, and foresters charge that in actual practice the State Auditor makes sales irrespective of the advice and approval of the State Forester and of whether or not the timber is marked for cutting. It will be recalled that when William T. Cox, former State Forester, endeavored to safeguard the forests of Minnesota some five years ago by protesting against this same situation, he was summarily discharged. Grover Conzet, the present State Forester, and Raphael Zon, Director of the Government's Forest Experiment Station at St. Paul, recently raised their voices in a similar protest. As was to be expected, they drew fire from the State Auditor who

"respectfully suggested" that the State Forester should resign on the grounds of incompetency and failure to cooperate.

The State Auditor's office seems to be a stumbling block in the way of forest conservation in Minnesota. When the State Forester refuses to lend aid to the wholesale disposal of State timber under destructive methods of lumbering, he is dubbed incompetent, inefficient, and lacking in cooperation. The present auditor has been in office nearly eight years, and the old policy of destruction appears to be going merrily onward. In reply to the charges recently directed against him, he lays the blame upon the State Forester.

Rapid disposal of State-owned timber for the benefit of a few lumber companies, some of them outside of the State, is a policy that should have the concern of the people of Minnesota. From the standpoint of recreation alone, proper and conservative handling of the forest resources of the State is urgently dictated. Yet years of controversy within the State have failed to bring forth a clear-cut forest policy or State machinery equal to the task of perpetuating and upbuilding of the people's forest properties. The hopeful factors in the situation at the present time are the existence of an able interim commission under the leadership of the Lieutenant Governor, and the constructive attitude of several large daily newspapers, notably the St. Paul *Pioneer Press* and *Dispatch*, which are seeking to clarify the issue in the public mind. With the help of these agencies, and a clear unbiased determination of the forest situation in the State, it is to be hoped that an awakened, intelligent public sentiment will soon take an aggressive hand and clear up a condition which, until cured, will continue to hold back the forest development of Minnesota.

One in Eight

There is a common belief that our National Parks draw more visitors during the course of a year than any other outdoor attraction which Uncle Sam has to offer. Figures published by the government, however, do not support this belief. In round numbers, 2,355,000 people visited the National Parks in 1927. During the same year, more than 18,000,000 people visited the National Forests. Since 1924 visitors to the National Parks have increased by about one million while over the same period the number seeking pleasure in the National Forests increased by seven million. Going back to 1917 and following the figures through year by year, the average rate of increase of visitors to the National Forests has been a million and a half a year.

Another prevalent impression upset by these figures is that of all our National Parks, Yellowstone attracts the greatest crowds. As a matter of fact, three National Parks surpassed Yellowstone in the number of visitors during 1927. The Yosemite National Park in California headed the list with 490,430 visitors, followed by the Platt National Park in Oklahoma with 294,954 visitors and the Rocky Mountain National Park in Colorado with 229,862 visitors. Yellowstone with 200,825 visitors held fourth place.

These figures appear small compared to the numbers re-

ported for some of the National Forests. The Angeles Forest in Southern California, for example, with three million visitors surpassed in popularity all of the National Parks combined. One reason why the National Forests enroll more visitors than do the National Parks is because the former exceed the latter so greatly in number and area. Furthermore, the National Forests are more immediately accessible to a greater number of people. Theoretically, one person in every eight is now using the National Forests for one purpose or another. The great majority seek recreation and the fact that the number is increasing so rapidly would seem to prove that the American people have discovered the National Forests and have found in them recreation to their liking.

There are those who from time to time criticize the Forest Service on the grounds that it is giving undue weight to recreation in the National Forests. From the foregoing figures it would appear that it makes little difference whether the Forest Service encourages or discourages recreation as a forest activity. The American public like the National Forests and the recreation they offer. These great outdoor areas are the property of the people and they are going to use them, critics to the contrary notwithstanding.

Gourds for Bird-Houses

By ROBERT T. MORRIS

THE manufacture of bird-houses has increased rapidly in recent years, due to lively appreciation of the value of birds in their relation to the forests and agriculture. A still more rapid and widespread use of bird-houses will follow an understanding of the cheapness and durability of gourds, which are employed for this purpose extensively in the South.

Gourds, prepared to serve as bird-houses and hung in trees or elsewhere out of doors, are soon covered with lichens or moulds like those of tree bark. They appear to be accepted as natural objects by birds looking for breeding places. Incidentally, their hard, slippery exterior makes it difficult for squirrels, deer mice, snakes, and other nest robbers to gain an entrance.

As many as fifty bottle gourds have been gathered from a single vine growing from rich ground near Stamford, Connecticut. Even a crop of a dozen bird-houses grown on one vine will give the farmer or bird-lover an abundance of such houses at practically no cost. For birds ranging in size from the chickadee to the yellow hammer or screech owl, the ordinary dipper gourd or bottle gourd will suffice. For birds as large as the wood duck or barred owl, the dish gourd is necessary. These, incidentally, will serve as homes for the larger squirrels, opossums and even racoons in localities where the old natural timber homes have been destroyed, and increase of this kind of game is desired by hunters if not by farmers. For the animals, however, it is necessary to hang the gourds in such a way that they rest upon a limb; otherwise they would have difficulty in securing claw hold and reaching the entrance. Bees have been known to occupy a large gourd when the entrance is made attractive and small especially for them.

Seeds for the dipper gourd, bottle gourd, and other smaller gourds may be obtained from any dealer in seeds, but the supply of seeds of the dish gourd and of other large kinds is at present obtained chiefly from dealers on the Pacific Coast who make importation from the Orient.

Gourd vines require rich ground and good cultivation. They may be grown as far north as southern Ontario, but September frosts there will kill the vines that still carry a number of unripened fruits. It is only the well-ripened fruits which possess the hard exterior that is durable for years when exposed to all conditions of weather. Gourd vines must have full sunshine and extensive climbing space, because a single vine in one season may sometimes make an unusual growth of approximately one hundred feet.

In northern regions gourd seed may be first planted in the house or in a hothouse and then transplanted from the pots after danger from May frosts. Without this preliminary planting the seed can be put into the ground at a date suitable for squash or cucumbers in any given locality. An incidental feature of gourd raising is the beauty of its flowers. Their exquisite lines are not appreciated in the midst of coarse heavy foliage, but a

single gourd flower with its long stem placed in a vase with a single slender leaf of iris, for example, will appeal



Inviting a feathered home-maker, the bird-house grown on a vine swings merrily in the breeze. The insert shows varying types of bottle gourds destined eventually as homes for the feathered songsters

(Continued on page 511)

Forest Fire Insurance In Norway

By REIDAR HOLST, DIRECTOR

The Norwegian Mutual Forest-Fire Insurance Company

NORWAY is imminently a mountain and forest country. Of its total area of 121,000 square miles, about twenty-four per cent is woodland. The forests are particularly in evidence in the southern and eastern part of the country, but are also found scattered all over the country up to seventy degrees latitude north. The woods consist mainly of spruce, *Picea Excelsa* and Scotch pine, *Pinus Sylvestris* and partly of Birch, *Betula Verucosa* and *Odorata* along with a few other classes of foliferous trees.

In spite of the very northerly position of the country, the climate is, by reason of the influence of the Gulf stream, comparatively mild and along the coast, rainy. But in spite of the favorable climatic conditions the wooded areas are not of great magnitude, because of the high average altitude of the country and the indiscriminate exploitation of the forests in by-gone days.

Forest fires also have been responsible for the destruction of large tracts of woodland. With a growing appreciation of the values represented by the forests and an increased interest in their conservation, the idea of insurance as a means of safeguarding the proprietors of Norwegian forests against economical loss through forest-fires became ever more prevalent. After the idea had been discussed for about forty years, some of the leading forest proprietors of the country headed by Consul Anth. B. Nilsen and the writer succeeded in 1922 in promoting "The Norwegian Mutual Forest-Fire Insurance Company," the sole object of which was forest insurance.

This company was the first in the world within that category. In organizing the company and in drawing up the

articles of incorporation and the conditions of insurance, there was no previous experience to serve as a guide. The fact that no readjustment whatever has been made in respect to the company's policies and conditions of insurance brings out very clearly that the most practicable and suitable form of insurance was established in the beginning.

The company is still the only forest-insurance company in Norway. Its insurance applies only to young trees that are too small to warrant cutting to advantage. The line is drawn at trees with a diameter of about nine inches measured at a height three and a half feet from the ground. Norwegian forests are generally very open and as a rule a forest fire does not damage the larger trees to an extent that seriously depreciates their full commercial value when cut for manufacture. Consequently insurance of such trees is unnecessary. The line or maximum size of trees to be covered by the insurance is determined by the proprietor himself. The Norwegian forest soil is often very poor, a thin layer of mould on the top of rock or sand. In a forest-fire this thin layer of soil is often totally destroyed and the ground will forever remain bare and unproductive. If desired, the estimated productive value of this soil may be included in the insurance, as well as the cost of replanting.

The amount of the insurance, which of course should be as near as possible the actual value of the insured trees is determined by the proprietor himself to the best of his judgment. In the case of damage by fire the insurance amount is checked with a view to ascertaining whether there is any question of self-insurance. After a fire the amount of damages is ascertained either by a valuation committee



A fully equipped tower about forty feet high, manned by a guard with telephone connections with the central station in each district—This is a "fire-scout" station in Norway, where forest fire insurance is on a practicable scale



A portion of a wet flume, made of small logs near its outlet, in a woods operation in Telemarken District, near Notodden, Norway

consisting of one representative for the insurance company, one for the insured and an umpire, or alternatively it is agreed through negotiations between the company's consulting inspector and the insured.

The customary modes of insurance are: *Annual insurance*, which is arranged for minimum five year periods. The premium for such insurance is one and one quarter per cent during the first four years, one per cent during the next four years and thereafter six tenths per cent during the remainder of the insurance period. If notice of termination has not been given at the expiration of a five years period the insurance is automatically renewed for the next five years. After a total insurance period of twenty five years

divided into five yearly installments. Thereafter the insurance is a permanent one without payment of further premiums. The premium for such insurance is twelve and five tenths per cent. Any running "Annual Insurance" may at any time be converted into an "All-Future-Insurance" through the payment of a single premium which is determined with due consideration to the age of such insurance at the time of conversion. For forest plantations and for forests situated in districts where the danger of fire is particularly great a small additional premium is charged. For the smaller woods a rebate up to fifty per cent is granted provided the insurance is voluntarily converted into an "All-Future-Insurance."

The articles of the company which have been sanctioned by the King further contain provisions to the effect that no insurance may be terminated or reduced to any appreciable extent without the consent of the mortgage holders. After a fire, no indemnity can be paid over to the proprietor without the consent of the mortgage holders. The company is entirely mutual. The insured is a member of the Company and as such has a vote at the general meeting of the company which takes place once every year. The company is otherwise managed by a committee of fifteen members who meet yearly and by the board of directors consisting of four members,



A gigantic log boom in the Drammen River, near Honefos, Norway. This river drains one of the most important forest watersheds in the country

one of whom is the managing director.

The company was floated in 1912 without any capital and without the advantage of any previous experience upon which to base the enterprise. The fixing of the premium was a matter of estimate. Thanks to wide support and a favorable period thus far, the funds of the company now amount to \$613,000.00, and its portfolio constitutes about seventy per cent of all insurable woods in this country. In consequence of this brilliant progress the company has been able gradually to reduce its premiums, and as already mentioned, it is now in a position to tender to its members a prospective free insurance after an insurance period of twenty-five years.

As a point of interest it may be mentioned that the various municipalities of the country are very interested in forest-fire insurance. Thus, in some counties all the municipal forests are insured. The Norwegian State, on the other hand, on principle, does not insure any of its properties, and consequently no national property, including forests, is insured.

The introduction of forest-fire insurance has greatly facilitated the raising of loans on forest property. This had previously been practically impossible. The majority of our money lending institutions are now making forest-fire insurance an absolute condition for loans on forest property. One of Norway's largest credit-organizations is granting loans to the extent of sixty per cent of the estimated value of an insured forest, whereas for uninsured forests it grants loans for a maximum of only thirty per cent of the estimated value.

The company has been making energetic endeavours to bring home to the public the dangers of carelessness with fire in forests and fields. As a direct consequence of the company's work, a forest fire law embracing the whole of the country has now been passed. Under this law, it is not permissible to make fires



How they do it in Norway. An interior view of a mature stand of Scotch pine. The forest is fully stocked and is considered the finest stand in the forest of Tinn

in woods during the dry season. It also provides for the formation of forest-fire guards in all territories with permanent fire-officers and fire-masters, chosen by election. This law also imposes upon every fit man an obligation to join, upon notice, in the work of extinguishing forest fires.

In order that a forest fire may be quickly detected and located, approximately fifty fire scout stations have been built and are now in operation. These stations consist of a tower about thirty-nine and two-fifths feet in height at the top of which there is a guardroom in which is mounted an aiming plate, a map, and aiming apparatus. Each tower is equipped with a telephone and field glasses. The average distance be-



After a timber sale in Nordernov Forest. Close utilization is evidenced by the fagots, which will be sold for fuel, and the poles ready for sale as fence posts

tween these stations is twelve and one-half to eighteen and one-half miles. The guard stations are connected with central stations in each district and these central stations are able by means of the reports which they receive from the different guard stations to ascertain exactly the locality of a fire and to direct the firemen to the spot.

The forest-fire insurance company has contributed \$33,500 towards the erection of such guard towers in the course of the last few years and has also set aside funds to the extent of \$53,600 in the interests of forest fire guards. With the present guard-system, the good telephone connections, the ever improving system of roads and the increasing use of motor cars the prospect of quelling an incipient forest fire has considerably improved. The amount of the fire damages has therefore declined greatly during the last few years.

One of the main factors that has contributed towards the excellent results which the forest-fire insurance company is able to show after its first fifteen years of existence, is of course the great sympathy and interest with which it was received from the very outset, by the forest proprietors—large and small—of the country. Through this voluntary amalgamation the forest proprietors have succeeded before any other people in the world in solving the insurance problem in an independent and highly satisfactory manner.

Norway was the first of the north European countries to introduce forest fire insurance. Both Finland and Sweden have since adopted it partly along the lines of the Norwegian form of insurance. In Finland, The Finnish Forest Proprietors Mutual Forest-Fire Association in Helsingfors was organized in 1916. The mutual insurance company "Sampo" in Aabo opened a separate department for forest-fire insurance in 1914. In contrast to the Norwegian forest insurance, it is possible in Finland to insure both the young and the old forest. The basic premiums are considerably higher than in Norway, and the country is divided into numerous risk-districts with different scales of premiums. There is also a detailed system of additional premiums in the case of plant or activities entailing danger of fire, adjacent to or within the insured forest, and a rebate of premiums for measures that may have been taken to ensure immediate alarm and early quenching of the fire.

In Sweden, The Forest Insurance Company and a number of the fire insurance companies, such as "Svenska Veritas", "Skandia", "Fylgia" and "Göta" have during the last few years begun to write forest-fire insurance. Here, as in Finland, it is possible to insure both young and old forests. The rates of premium are about the same as in Finland. In Denmark the cost of replanting in planting fields may be covered through the insurance provided by the Danish Plantation Insurance Association.

Thoreau and I Visit Mount Katahdin

(Continued from page 460)

rapiers in a darkened room. It was a fisherman's nightmare. If I had used the new dry-fly imitation of the Mayfly, I could have filled the canoe. Royal Coachman or Parmachene Belle and Black Gnat, any fly was good. I proved my old maxim of patience, that there is "always an hour in the day when you will catch them."

I am one of those foolish fellows who climbs "for climbing." Irving Hunt told me that he spotted his trail up Mount Katahdin twenty-two years ago, in one day. Aside from slash roads, the Abol Slide Trail was the only one in existence. Thoreau climbed near Abol Slide, setting his compass for a northeast course. Who has not experienced a peak, "still distant and blue, almost as if retreating"? It is a man's job to toil up a blazed trail, logged and cairned, but to read of Thoreau, toiling up an angle of forty-five degrees, alone, pulling himself up by the help of roots and branches, to be finally defeated by clouds, raises one's respect for the Concord genius.

Mount Katahdin, meaning in Algonquin, "greatest mountain," is a cloud trap. Great blimps sail in serenely from the southeast and moor to Monument Peak. Charles Turner and seven other men made the climb in 1804. This irregularly shaped plateau, topped by four low summits about five hundred yards apart, sprawls like an octopus, sending out tentacles of rock which hold great basins in their embrace. East Peak rises 5,210 feet and West Peak, 5,273 feet. Chimney Peak is reached by a knife edge, which

continues to Pamola Peak, 4,819 feet high. A four-mile plateau falls away abruptly from one thousand to eighteen hundred feet on all sides.

It is a hard five miles from York's Camps to the tableland. You cross Daicey Pond, if with a guide, skirt Elbow Pond to the Millinocket tote-road, and across Katahdin Stream. Thoreau writes, "The mountain seemed a vast aggregation of loose rocks, as if some time it had rained rocks, and they lay as they fell on the mountain sides, nowhere fairly at rest."

It is a push upward of two miles from the tableland to Monument Peak. From the summit, the eye swings a six-hundred-mile circumference. The mountain itself covers over eighty square miles and lifts man to a vision of about thirty thousand square miles. From Moosehead Lake in the southwest, "like a gleaming silver platter at the end of the table," to Millinocket Lake, with its hundred islands, the beauty of Thoreau's perfect description applies. He says, "The forest looked like a firm grass sward," and the effect of these lakes in its midst has been well compared to that of a "mirror broken into a thousand fragments, and wildly scattered over the grass, reflecting the full blaze of the sun."

Mount Katahdin cannot be equaled in the Eastern United States for isolated wilderness, and, fortunately, there is no cog railway to lure "goofers" to a vision which they have not earned. Its companioning peaks are not imposing, but Double Head and many smaller peaks are most beautiful.

Utah's Most Valuable Tree

Introduced by Early Settlers, the Lombardy Poplar Has Transformed a Barren Landscape into One of Distinctive and Exotic Beauty

By FRANK R. ARNOLD

"THE thing I like about your Utah," said the Frenchman while we were driving along the Yellowstone highway, "is the poplar trees. They give you distinction and raise you above the commonplace Middle West. Yet you say everyone is cutting them down and trying to replace them with Norway maple or elms."

This was indeed a fact. For years the people of Utah had been attempting to replace the Lombardy poplars introduced by its early settlers, and which flourished along the many canals and irrigating ditches that were the basis of Utah's agricultural success.

"How foolish of them," my friend, the Frenchman, wisely commented, recalling to mind, no doubt, the magnificent part the Lombardy poplar had played in restoring the tree history of his native country. "The Lord meant the Norway maple for the Middle West and the elm for New England, but for Utah it is the poplar. It links Utah with the meadows of France and the broad valleys of Italy, to give your State a European distinction that is found nowhere else in the United States. They can't raise Lombardy poplars around Boston, New York and Chicago. Yet in Utah they raise them and cut them down.

"It would be all right to cut them down," he continued after waiting a moment for this Gallic contempt to penetrate my Utah hide, "if you planted others in their place. Possibly you do not realize it, but they are the one touch of intimate and elegant picturesqueness in Utah. Mountains and valleys are sublime, but they can never give the intimate background that the poplar does. And you need background here in Utah where the sun is bright and the mountains bare. The beauty of Utah is not the peach orchards, or mountains, or lakes, as so many people suppose, but the poplar trees on the roads, canals and skyline."

Yes, my friend was right. The beauty of Utah seemed to radiate from the irregular skyline of poplars that came into the picture wherever one looked. They seemed to confirm the words of a famous European traveler who once said that only Italy, France and Utah knew how to grow the Lombardy poplar.

Utah has been growing Lombardy poplars ever since the pioneer days of the forties and some of her trees are already more than fifty years old. If allowed to grow they will live on indefinitely in exuberant luxuriance. The method of growing poplars is the same in Utah as it is in France or Italy, and anyone who discovers the secret can have permanently superb trees. It is all a matter of ditches, drainage, good soil and topping. The poplar loves wet feet but at the same time must have good drainage. Utah farms and villages provide many miles of canals and irrigating ditches, and poplar trees cannot fail to flourish and supply the dense, thick, almost chilly shade that is such a boon in the hot summers of Utah. Then in winter every Utah householder either goes up to the canyon for his wood supply or else tops the row of poplars along the street in front of his house or around his fields, cutting them down to within ten or fifteen feet from the ground. The poplar, like its sister, the willow, responds admirably to the trials and tribulations of losing its head. The pollarded tree gains a stronger, deeper root and so is in less danger of being uprooted by

strong winds. It also makes a stronger trunk and a top so tall and bushy that in two or three years all signs of topping have vanished except the increased vigorous growth.

So much does the Lombardy poplar respond to topping, especially as regards suckering around the root, that it makes excellent high hedge or wind-break material. One Utah college set out an open air theatre entirely of Lombardy



Twin poplars, limned in beauty against the distant mountains



Green and beautiful poplars flank one side of a road into one of the many oases in the Utah desert, lending a distinctive note to the landscape found nowhere else in the United States

poplars in imitation of a German park model. The backdrop of the stage was a row of closely planted poplars, while the wings were of the same trees but kept at a lower hedge level. The auditorium was a terraced hillside and the college might have had the cheapest, most unique, most beautiful open air theater in the United States had it taken the trouble to water its trees, for the poplar tree in Utah never dies unless neglected on the score of water or drainage.

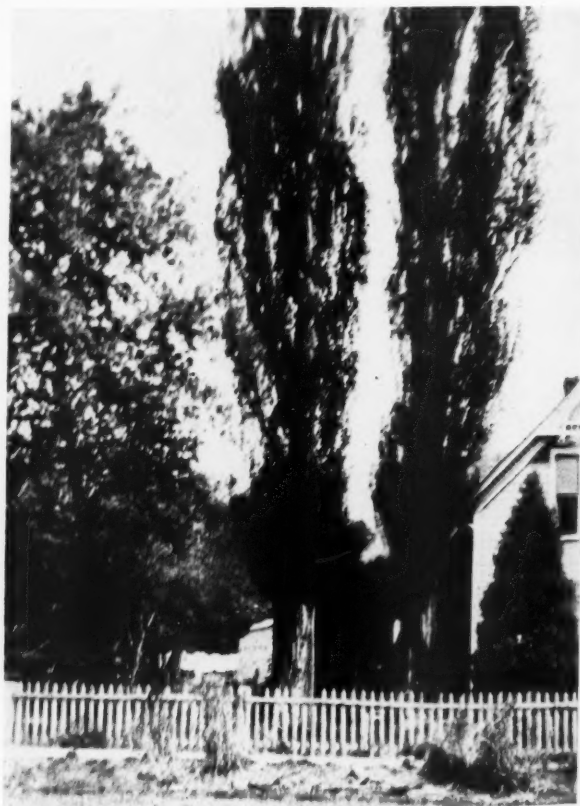
"Another asset the poplar has for your state," continued the Frenchman, after studying the landscape, "is to break up the great open spaces. Utah is big, and it is hard to love tenderly anything big like your Wasatch range or your great mountain valleys. You must break them up and love them by bits. Your poplars cluster around the villages and make them stand out in intimate, lovable individualities and do away with the dreary stretches of open space. Do you know what Christopher Morley said about the poplar tree? He called it the French tree, because it is so graceful and girlish. He ought to call it a Utah tree just as much as a French tree, unless you are planning to exterminate it."

Then he went on to tell me how valuable roadside trees are in Europe, how many communities pay their state taxes with fruit or lumber from wayside trees.

"We Europeans," he explained, "look on poplars as a

source of income as well as beauty. Around Ypres, in Belgium, when a child is born the parents set out as many poplars as they can afford in order to have a dowry for their girls or a capital for their boys as soon as the children and trees are of age. In France and Belgium they estimate that a poplar tree increases in value four francs for each year of its life and that is twenty cents at the present rate of exchange. Up in the Chateau Thierry country, in 1923, a community sold 425 poplar trees, each thirty years old, for 60,000 francs, which works out to 140 francs a tree and about four and one half francs a year. That was all profit. It doesn't really cost much to start a poplar wood lot. You merely take year old cuttings and stick them in the soil. The French use nursery trees, though, fertilize and cultivate the soil and dig trenches for drainage. But even with this expense they clear their four francs a tree per year. All these attentions mean money, for between two rows of poplars planted at the same time the difference is always in favor of the one with a ditch. The well drained poplars are always twice as large as those that are not, all other things being equal.

"I believe it is on account of the numerous ditches in Utah that the poplars do so well and that is also probably a reason why poplars do so poorly in New England. The poplar tree is to France what the pine and spruce are to



Twin sentinels guard this little farm homestead. The Lombardy poplar flourishes in Utah as it does only in Italy and France, and many trees, planted in the forties, have changed the face of this arid country

America. We use immense quantities of poplar wood for paper pulp. We use it to make boxes, fruit containers, excelsior, matches, playthings, furniture and firewood. Soaked in copper sulphate, it will stand all kinds of weather as well as pine wood and its sawdust is used in the bedding of farm animals and in the manufacturing of wood alcohol. I tell you we French are never going to stop planting poplar trees and you of Utah had better

adopt our motto with regard to the poplar. We refer to the tree as dowry for our children and income for our old age."

John Galsworthy says there is nothing in the world so full of poignant charm as a linden tree in full bloom, and Mae-

terlinck once said that he would not be happy in any heaven that does not contain a certain beech tree he had known all his life. Each to his liking. Those of us who have seen

rows of Lombardy poplars in Utah will say that there is nothing so lovely as they stand out in their stiff grace against the sky or hug a homestead or farmhouse. They give a touch to the landscape which is as necessary in commonplace America as a touch of red was to Sar-



The poplar in Utah finds stronger footing when it loses its head. Pollarding is good practice there, as is evidenced by these trees, topped about a year ago

gent in every one of his portraits, or as a red carnation is to an Andalusian coquette. Just as we want colonial furniture, a Louis XIV chair or Brittany faience in our houses, so we want Lombardy poplars in Utah.

Wild Life in The Canadian National Parks

(Continued from page 475)

the natives merged themselves with the larger imported herds.

In the other National Parks there are about one thousand elk, distributed as follows: Buffalo National Park, approximately 386; Waterton Lakes National Park, in Alberta, approximately 100; and Elk Island Park, in Alberta, 455.

Nemiskam Antelope Reserve is a fenced area of eight and one-half square miles in southeastern Alberta. This reserve was created in 1915, when the late Maxwell Graham, an officer of the department, succeeded in having a fence built around a herd of forty-five antelope, or pronghorn (*Antilocapra americana* Ord). Today the herd has grown by natural increase to approximately 475. The antelope is one of the most graceful of the hoofed animals, and is the sole member of a family found only in North America.

The foregoing three examples give in brief an idea of the success attendant upon the policy of protection in National Park areas. Latest available figures on animals and other game referred to bear this out. They show a very satisfactory increase in game throughout the National Parks during the past year. In Wainwright Buffalo Park the natural increase of buffalo was approximately 1,200; in Nemiskam Antelope Park the increase in antelope was approximately 100. Estimates show that there are about 386 elk and 1,470 mule deer in the Wainwright Park, while in Elk Island Park are now about 227 moose, 455 elk, and 300 mule deer in addition to the buffalo. In Rocky Mountain

National Park, in Alberta, the oldest National Park in Canada, game seems to be increasing. In Kootenay National Park, in British Columbia, game has increased approximately 100 per cent since its establishment, in 1920.

Jasper National Park, in Alberta, having an area of 5,380 square miles, has had a rapid increase in all species of game. A particularly large increase has been noted among the elk, and herds of from eighty to one hundred may be seen almost any evening in the neighborhood of Jasper townsite, headquarters of the park. The increase in Rocky Mountain sheep has been little short of phenomenal, and it is estimated that there are at least 12,000 in this region. Goats are plentiful and moose continue to migrate into the park in large numbers, seeming to sense that they are protected while within the confines of the park. Deer are numerous, conservative estimates placing the number at about 15,000. Other game animals on the increase are bears, beaver, and a host of smaller fur-bearing mammals.

The question of dealing with predatory animals in the National Parks of Canada has not been of any great concern, for the experience has been that predatory animals exercise a beneficial restraint on other species and tend to retain the balance of nature. Of all the species of carnivora within the parks, it was found necessary to control by killing only wolves, wolverines and coyotes, whose habits and habitat have been changed by the advent of man.

SARLING SAM'S SCRAPBOOK



Beware of the Sport Models

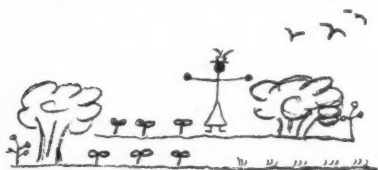
Here is a case, found in the *Detroit Times*, where protective coloration was ruinous:

Sportsman: What was the idea in shooting that zebra?

Hunter: My wife wanted a new awning.

Sounds a Bit Scotch

Here is an answer from *London Answers*:



"Aren't you afraid the birds will eat your seeds? You ought to put up a scarecrow."

"Oh, it's not worth it. There's always one of us in the garden."

More Work for Fire Prevention People

And now we hear from Dr. W. A. Hamor, of the Mellon Institute, that there is a plant in Africa which gives off an inflammable gas during hot weather. It would be interesting to know if the doctor has ever tried to ignite the fumes from the *Ailanthus* or tree of heaven, widely planted in America and sometimes known as "the tree which smells to heaven."

He Should Spray for Static

The American Forestry Association wants to please, but it is a bit stumped by this request from Colorado Springs, Colorado, which followed the American Forest Week radio program, promising to give away a four-year-old Norway spruce upon mail request:

"DEAR SIR: Please send me free a four-year-old Japanese Beetle. I will take good care of it."

Your truly,
— — —

Suggesting An International Contest

Cricket fights are a popular sport in China, and a champion cricket is valued at \$100, or even more, according to a newspaper story.

There is a mosquito up in Minnesota who, if still living, would make a great showing in the ring. I spent a whole night fighting him in 1907.

Notice to Birds

The Honolulu *Star-Bulletin* relates that a Yale professor has found a hundred-foot worm. The early bird that gets that worm will have to exhibit more than promptness.

In Chicago

"I was out hunting last week, and after tough luck all day was returning to town as the early moon was rising when I spied a raccoon. Taking deliberate aim, I fired. Imagine my horror when I went to pick it up and found it was a college boy," says Brown of Norwood Park in the *Chicago Tribune*.

Summer Tourists, Please Note

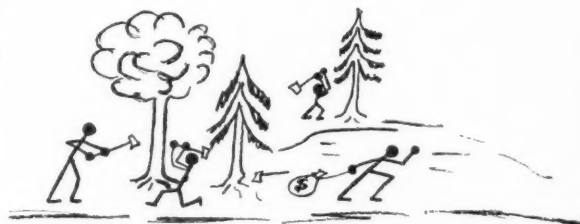
The tenth anniversary of national air-mail service, among other things, brings a bit of comfort to the ardent eastern tourist who finds difficulty in understanding the ways of a western horse. The following report from an air-mail pilot, read into the *Congressional Record* by Representative Ackerman, of New Jersey, during Air Mail Week, reveals that even sky-busting aviators are at times subdued by the cayuse:

"I was crossing the Rubie Mountains one day at about 10,500 feet when I broke a set of gears and landed in a very small field in the Secret Pass. A rancher riding range saw me land and rode over and let me take his horse to ride to the nearest ranch for help. After phoning to Elko I started back to the ship on horse. I started to mount and the horse took off in a climbing turn before I got in the seat and had my safety belt fastened.

"To make a long story short, I overcontrolled her nose, went down, and I spun or sideslipped—I don't know which—into the ground with great speed. I broke my ankle and was well shaken up by this second forced landing.

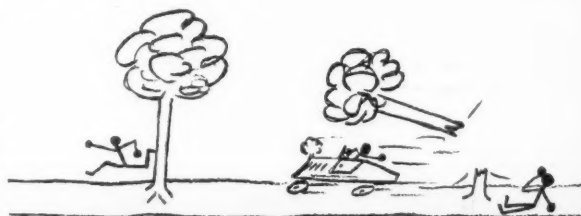
"After filling the air with smoke for a few minutes I got the beast again and we took off in a gentle lope and returned to the ship. Help came; we repaired the motor and I flew the ship to Elko.

"Motto: Always be sure you have your belt on before you take off with a western horse."



Forest Conservation Blues

Discouragement over the number of trees chopped into since the California rancher recently found the bag of gold by chopping into a tree root is not tempered by later news, viz, that pedestrians have given up disguising themselves as street trees because it does not seem to add to their safety from reckless drivers. Thus does nature's balance operate.

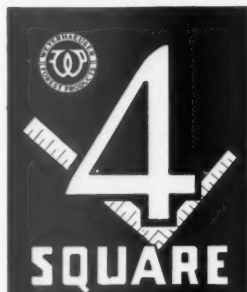


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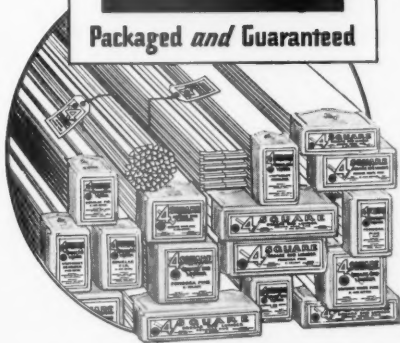
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AROUND THE STATES



New Hampshire Forestry Meeting in September

The annual Forestry Conference of the Society for Protection of New Hampshire Forests will be held at Keene, New Hampshire, September 5 to 7, inclusive. On the preceding days, September 4 and 5, the New England Section of the Society of American Foresters will hold its summer meeting at the Yale Forest, near Keene.

California Forestry Board Named

Governor Young, of California, has named the State's new Forestry Board of seven members, to succeed the old four-member body abolished by the 1927 legislature in creating the Department of Natural Resources, with forestry as one of its divisions.

Former Governor George C. Pardee, who served at the head of the State's forestry service from 1919 to 1923, and A. J. Mathews, of Susanville, for many years a member of the Assembly, were appointed representatives-at-large. Major Swift Berry, Camino, formerly with the United States Forest Service, and director of the California Forest Protective Association, will represent the pine industry.

W. O. Blasingame, Fresno, vice-president of the California Cattlemen's Association, will represent the livestock industry. H. S. Gilman, Los Angeles, engineer and general manager of the San Dimas water district and president of the Angeles Forest Protective Association, will represent water conservationists. D. Eyman Huff, of Orange County, Southern California agriculturist, will represent farming interests. Professor Walter Mulford, professor of forestry at the University of California, at Berkeley, and vice-president of the International Forestry Congress, was named to represent the redwood industry.

Representatives of the several groups, industries and branches of the forestry industry on the board were provided for in the natural resources department law.

Leopold Resigns Laboratory Post

Aldo Leopold, associate director of the United States Forest Products Laboratory, at Madison, Wisconsin, resigned July 1 to engage in private work as consulting forester, specializing in game management.



ALDO LEOPOLD

Mr. Leopold's first private undertaking will be an assignment from the Sporting Arms and Ammunition Manufacturers' In-

stitute to make a survey of American game resources. The purpose of the survey is to collect the experience and ideas of sportsmen and other conservation agencies as to the best ways and means for inducing the sustained production of game crops. By assembling the facts and making them available to the sportsmen, the sponsors of the survey hope to stimulate the formulation of an effective program of game restoration.

Mr. Leopold's departure ends nineteen years of work in various branches of the United States Forest Service. In 1908, following his graduation from the Yale Forestry School, he entered the government service as forest assistant on the Apache National Forest in Arizona. In 1912-13, Mr. Leopold was forest supervisor in charge of the Carson National Forest, in New Mexico. He was given the associate directorship of the Forest Products Laboratory in 1924.

Although Mr. Leopold has devoted himself to organization problems of the Forest Products Laboratory he has never lost touch with forestry afield nor with the science of game management, a specialty to which he is devoted and in which he has long been recognized as an expert. While at the Laboratory he served on the executive council of the Society of American Foresters and the board of directors of the Wisconsin Division of the Izaak Walton League.

Will C. Barnes Retires from Forest Service

Completing twenty-one years with the United States Forest Service, Will C. Barnes retired on July 1 as Assistant Forester in Charge of Range Management.

Will Barnes is widely known among foresters and livestock men throughout the country. He has devoted a long life to pub-

lic service and has played an extremely important part in the development of grazing management and the conservation of range resources. Although he has reached the retirement age, Mr. Barnes will not cease active work in the Government service, but will assume the position of Secretary of the United States Geographic Board.

Mr. Barnes has had an extremely varied career as soldier, cattleman, and public official. Born in San Francisco, June 21, 1858, his first interest was in music and he received considerable musical education. His adventurous spirit, however, took him to Arizona while yet a boy, and he became identified with the early pioneer life of that State. During the Apache Indian War in Arizona, he served in the United States Army as first-class sergeant in the Signal Corps. In recognition of outstanding valor in line of duty when he made his way through hostile Indian lines to secure relief for his besieged detachment, he was awarded the Congressional Medal of Honor in September, 1881.

Mr. Barnes had many years of experience as a practical stockman on the ranges of the Southwest. After leaving the military service, he went into the cattle business in Arizona. In 1888 he was appointed a member of the Arizona Livestock Sanitary Board, serving for twelve years. He was later president of the New Mexico Cattle Sanitary Board. He has held a number of public positions, including Arizona Commissioner to the World's Fair in 1903, member of the Arizona State Legislature, 1891 to 1893, and of the New Mexico Legislature, 1901 to 1903.

He was one of the first grazing experts in the Forest Service, and has been a leading figure in the grazing-management work of the Service almost from its inception. He entered the Forest Service as an Inspector of Grazing at Albuquerque, in 1907. In 1915 he became Chief of the Branch of Grazing Management, and has held this position to the present time.

Minnesota Forest Renamed

By executive order of the President, the Minnesota National Forest, in Minnesota, will henceforth be known as the Chippewa National Forest. The change in name was deemed advisable because of the confusion resulting from the fact that there are two National Forests as well as a State forest in Minnesota. The former Minnesota National Forest, now the Chippewa, is situated in the north-central part of the State near Cass Lake, and embraces an area of approximately 191,000 acres. It was established by act of Congress in 1908. The other National Forest in Minnesota is the Superior, in the northeastern corner of the State, with an area of 810,000 acres.

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Urge Trails in Berkshire Hills

At a recent meeting of the Berkshire Conference, an organization of business and professional leaders in western Massachusetts, the building of adequate forest trails in the Berkshire Hills was urged. The conference also endorsed the move that Massachusetts complete its link in the co-called Appalachian Trail, which is to extend from the White Mountains of New Hampshire to the southern Appalachians. As far as possible this trail will be laid in State Forests and Reservations.

A committee consisting of Captain F. L. Couch, of Dalton, Archibald Sloper, of Pittsfield, and Walter Prichard Eaton, of Sheffield, was appointed to study trail conditions in the Berkshire Hills.

Bear Stoned to Death on Highway

Falling thirty feet from a rocky cliff near Viewpoint, Oregon, a brown bear, weighing nearly 200 pounds, landed directly in front of an approaching automobile, and was stoned to death before it could regain consciousness. A post-mortem revealed that the bear's back was broken by the fall. The incident is said to be most unusual in the bear annals of the state, inasmuch as it occurred on a widely traveled highway in a region that is well inhabited.

Natural History School Opens

The Allegheny School of Natural History opened its second season in the Allegheny State Park, New York, July 7. The school was established in 1927 to meet the need for outdoor training and experience in natural history, to supplement the conventional lecture room and laboratory instruction offered by city schools and the colleges. It is conducted by the Buffalo Society of Natural Sciences in cooperation with the New York State Museum and the University of Buffalo.

To Sell Camp Lee

Because of the intention of the War Department to sell Camp Lee, near Petersburg, Virginia, as soon as the necessary authority is secured from Congress, the Secretary of Agriculture has requested the Secretary of War to initiate action to secure the revocation of the Executive Order under which Camp Lee was established as a National Forest. It is stated that the continued administration of the area as a National Forest by the Forest Service would be unproductive of beneficial results and it would be unwise for the Forest Service to make the expenditure of public funds which would be required for proper management of the area as a National Forest.

Arboretum in West Virginia

The proposed arboretum at Waddington, West Virginia, will contain several thousand genera, species and other varieties of plants acclimated to that region, according to *Forests, Parks and Beautification*. The arboretum will cover an area of seventy acres and contain 250,000 individual plants.

Forest Nursery for Montana

A cooperative agreement with the Federal Government, which provides for the establishment of a forest nursery at the Montana State University, at Missoula, has been made by university officials. It is the plan to develop a tract adjacent to the university campus into one of the largest forest school nurseries in the United States. The distribution of this nursery stock each year among the farmers and ranchers of the State will be under the direction of the extension service of the university. Approximately half of the cost of production at Missoula and the distribution from Bozeman of the nursery stock is defrayed by the Federal Government and the balance is paid by funds provided by the State university.

New York Gains in New Forests

An increase of over 250 per cent in the planting of school district forests in New York during the spring of 1928 is reported by the State Conservation Commission.

The oldest school district forest in the State is only a few years old but the idea of planting forests that at maturity will pay either wholly or in part the cost of maintaining district schools is growing in popularity in rural districts, says the Commission. This spring 187,000 trees were planted in school district forests as compared with 49,200 last spring and deferred orders promise materially to increase this year's gain in the fall planting.

Another notable increase shown in the spring planting figures is in municipal plantations where the total spring planting was 3,161,450 trees, an increase of 487,450 over last year.

The largest increase in any one class of tree planters came from farmers and individual land owners who planted 10,345,565 trees, an increase of 772,740 over the spring of 1927. Sportsmen's clubs and other organizations planted 1,045,800, an increase of 389,900. Industrial concerns planted 1,556,900; schools, 165,400 exclusive of regular school district forests; boy scouts 120,400, and the State, including State institutions and parks 3,089,000.

The total spring planting was 19,484,515 which will be increased by State and other plantings in the fall by about 6,000,000 trees, making the largest year's planting since the reforestation movement began.

Utah Men Head Bear River Refuge Project

David H. Madsen, State Fish and Game Commissioner of Utah, has been appointed superintendent of the new migratory-bird refuge authorized to be established at Bear River Bay, Utah. Mr. Madsen is president of the Western Association of Game Commissioners and has been prominently identified with the conservation of wild life for a number of years.

The construction work necessary for the reflooding of Bear River marshes, will be performed under the direction of L. M. Winsor, Bureau of Public Roads engineer, stationed at Logan, Utah. During the summer of 1927, Mr. Winsor made a careful study for the Bureau of Biological Survey of conditions at Bear River Bay.

New Jersey Gamekeepers' School

A gamekeeper's school, for the purpose of training men who can take charge of game bird raising and game restoration work for State commissions, agricultural colleges, sportsmen's clubs and private estates, has been established at Clinton, New Jersey, by the Game Conservation Society. A tract of fourteen hundred acres has been secured for this purpose.

Trout Eggs to Germany

During the past two or three years the United States Bureau of Fisheries has been furnishing supplies of trout eggs or live fish for a number of foreign countries. Constant requests for further shipments are being received and it is evident that American fishes are in high esteem in other parts of the globe. One of the latest shipments was of 40,000 rainbow trout eggs to Germany. The sentiments of the recipients of these eggs are indicated by the following quotation from the *Hamburger Fremdenblatt*:

The Hapag steamer New York brought to Germany last Sunday 40,000 eggs of American rainbow trout, which were presented to the German Bureau of Fisheries from the United States Bureau of Fisheries. Director Lübbert of the Bureau of Fisheries received this highly welcome gift: A small tin trunk. The trunk itself was opened with the greatest of care, as if it contained a raw egg, because it requires the greatest precautions to bring these trout eggs to Europe in a live condition. Before the war, shipments of trout eggs to Germany were made repeatedly in order to make possible a blood rejuvenation of the trout-breed. This is one of the first shipments since the war. The eggs, which originated from the Bureau of Fisheries in White Sulphur, West Virginia, were in good condition and after a few hours were sent to the fisheries in East Prussia, Westphalia, Oldenburg, Thuringia, Bavaria, Württemberg, Baden, and Austria.

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Georgia Governor Offers Land for Forest Research

By R. O. HUIE

Governor L. G. Hardman, of Georgia, has offered the United States Government a tract of land in Jackson County, Georgia, comprising six hundred acres for forest research and experimental purposes. The donation is conditioned upon the Government planting, growing and experimenting with black locust, persimmon, dogwood, mulberry, honey and black walnut on the tract, and that Congress appropriate the sum of sixty thousand dollars annually for the purpose of planting, growing and experimentation with these species, until otherwise provided by law.

The purpose of the experiment, among other things, is to determine the value of the flowers of such timber for honey; their fruits for sugar, alcohol, tannic acid and medicinal properties; their food value to the people; their food value to birds, bees, hogs and other domestic animals; and their fertilizing and timber values.

A resolution has been prepared providing that the research and experimental work be conducted by the United States Forest Service, the object being to determine to what extent the species of timber may be recommended to the agriculturists of the county as a solution of the problem of idle acreage. It will be transmitted to members of Congress from Georgia.

Due to the ravages of the boll weevil, cotton, for many years the money crop of Georgia, has become unprofitable and as a result there are thousands and thousands of acres of idle land within the borders of the State. Left uncultivated for even a few years, the lands grow up in what is called old field pine, which is unsuitable for lumber because it decays within a few years.

It is the Governor's idea, in bringing this matter to the attention of the National Government and seeking its aid, as well as in his making the donation, to first ascertain what are the most profitable timbers to grow on these idle acres, and then to grow those timbers.

The Tupelo Gum Tree

Cypress swamps of the South have yielded richly in valuable timber, says the "Forest Worker," but have not heretofore been regarded as profitable for reforestation. The "wood eternal" has been cut out clean, leaving chiefly tupelo gum, a tree long considered to be of very little worth.

Now E. W. Hadley, of the Southern Forest Experiment Station, says that tupelo gum is coming into its own silviculturally and may be the savior of these dismal areas. Cypress will not reproduce rapidly or dependably enough to reforest them, but tupelo reproduces promptly and adequately. The growth of industry in the South and the de-

mand elsewhere for southern woods promise an outlet for this wood. Tupelo gum is now used by the million board feet for boxes, crates, and veneer, and is beginning to be sought as a paper-pulp wood.

Douglas Fir Exhibit in Italy

A display of various items of Douglas fir lumber, including three pictorial sand-etched Douglas fir panels, were recently exhibited at a fair in Turin, Italy, says *Wood Construction*.

Other items in the display included a number of large pictures of Pacific Northwest forest scenes, three Douglas fir doors of American make and fishbone pattern flooring of Douglas fir combined with colored woods. The walls of the display space were covered with Douglas fir panels.

Tennessee Enlarges State Nursery

Additional land for a State nursery and demonstration planting tract has been acquired by the Tennessee Division of Forestry, according to R. S. Maddox, State Forester. Through this acquisition the State will increase its yearly seedling production and also experiment with the planting of white pine, red pine, short-leaf pine, European larch and yellow poplar.

The State nursery last year distributed 92,000 seedlings, which were planted on idle and waste lands in western Tennessee. In addition to this, land owners purchased and planted in the same region 54,000 seedlings. Most of the plantings were black locust.

Bear Valley Timber Awarded

The Edward L. Hines Associated Lumber Interests of Chicago, Illinois, has been awarded the bid for 890,000,000 feet of timber in the Bear Valley unit of the Malheur National Forest, in Oregon, according to the United States Forest Service. The bidder will be given until August 1 to complete details of the transactions, as submitting satisfactory showing as to financial status of the operating company and making necessary railroad arrangements.

This is the block of timber which was sold five years ago to Fred Herrick. The sale was later canceled, according to the Forest Service, on account of Herrick's failure to comply with the terms of the contract.

The timber unit lies north of Burns, Oregon, and one of the requirements of the contract is that the lumber shall be manufactured at or near this point. Nearly 770,000,000 feet of Western yellow pine and 120,000,000 feet of other timber will be included in the sale. The Government will receive more than \$2,250,000 for the sale, of which thirty-five per cent will be returned to the State and county for roads and schools.

Vermont Adds to State Forests

Governor John E. Weeks, of Vermont, has approved for purchase by the State Forest Service during the present fiscal year, 1,530 acres of land to be held as State Forests. In addition to this, a gift was received of 900 acres.

According to Commissioner of Forestry R. M. Ross, the new purchases and gift bring the total number of State forests in Vermont up to eighteen, with an area of 33,725 acres. Two new forests have been established—the Granville Reservation, comprising 900 acres, which was donated by former Governor Redfield Proctor, and the Willoughby State Forest in Sutton, with an area of 620 acres.

Society Elects Officers

The Appalachian Section of the Society of American Foresters has elected the following officers for 1928: Dr. C. F. Korstian, Silviculturist, Appalachian Forest Experiment Station, Chairman; M. A. Mattoon, Supervisor, Pisgah National Forest, Vice-Chairman; Dr. F. W. Haasis, Assistant Silviculturist, Appalachian Forest Experiment Station, Secretary.

May Control Blister Rust Menace

White pine and sugar pine timber in the forests of the United States is valued at \$550,000,000, and several million acres of young growth promises future values. In Miscellaneous Publication 23-M, "Protect Western White Pine and Sugar Pine from Blister Rust," the United States Department of Agriculture declares that these valuable trees are threatened with destruction, and pleads for their protection from the deadly blister rust, now widely prevalent from Pennsylvania northward, from Michigan to Minnesota, and in Idaho, Washington and Oregon.

White pine blister rust is a fungous disease of foreign origin, which has the peculiarity of being unable to pass the infection from one white pine to another. An infected white pine is only capable of infecting the various varieties of currants and gooseberries, wild and tame. One currant or gooseberry may infect another currant or gooseberry, and from these bushes the blister rust spores travel on the wind to pines, but are effective only over comparatively short distances. These currant and gooseberry bushes are of comparatively slight economic importance, and the wild varieties have more the nature of weeds. Blister rust can be checked and the damage to the white and sugar pines eliminated by eradicating all currant and gooseberry bushes in the vicinity of white pine or sugar pine trees, says the Department.

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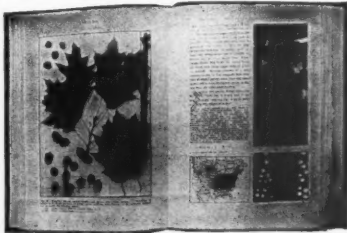
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Book News



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Reviews

EVERGREENS FOR THE SMALL PLACE. By F. F. Rockwell. Published by The Macmillan Company, New York. Price, \$1.00.

Because Americans are doing more home planting today than ever before, they feel an increasing need for easily accessible and accurate information on all types of planting and garden planning. "Evergreens for the Small Place" is one of a series of the "Home Garden Handbooks" which brings this sort of knowledge to the amateur planter. The books are planned for use in connection with the catalogs of a reliable nurseryman and carry instruction which acquaints the home-owner with plant material and which will enable him to work intelligently alone or in cooperation with his landscape gardener. This particular volume, dealing with evergreens, discusses tersely the usefulness of evergreens from the standpoint of beauty in small-property planting. Also, there is a well-illustrated treatise concerning the special uses of the various types of evergreens, and of their planting or transplanting and general care, including information as to the best soils and fertilizers. The last chapter lists the most commonly used evergreens for special purposes. In this small volume is a digest of fundamental facts regarding the successful planting of evergreens for beauty and utility.—D. M. K.

FEDERAL AID. By Austin F. MacDonald. Published by Thomas Y. Crowell Company. Price, \$2.75.

The so-called fifty-fifty plan by which our National Government promotes various activities is discussed in this book. Naturally to readers of this magazine, the chapter on Forest Fire Prevention holds greatest interest.

Evidently the author has gone to considerable effort to discover the effectiveness with which the Forest Service has administered the cooperative provisions of the Weeks Law and the Clarke-McNary Law—even to the extent of corresponding with most of the thirty-three State foresters. It is gratifying to learn that thirty State foresters replied to his questions, and twenty-six were emphatic in their declarations that the laws have been administered without Federal domination. In fact, several State foresters went further and declared that without the

leadership received from the Forest Service the present progress of their organizations would have been impossible.

Dr. MacDonald is mildly critical because the Forest Service has not seen fit to set up minimum qualifications for State employees whose salaries are paid in part from Federal funds. In subsequent chapters he points out that the establishment of such qualifications in other lines of Federal cooperation has aided materially in reducing the number of political appointments. In spite of this he is convinced that the Forest Service has been remarkably successful in its effort to raise State standards. On the other hand he is generous in his praise of the Forest Service officers whose duties include the inspection of Clarke-McNary activities.

As a result of studying Federal aid in seven forms of national activity, Dr. MacDonald is convinced that it has raised State standards, stimulated greater interest in each of these activities, and that similar aid should be granted for other Governmental activities generally conceded to be of sufficient importance. Persons confronted with the need for statistics as well as arguments to support the advantages of Federal aid will find some pertinent figures well discussed in the book.—G. H. C.

Most interesting is the booklet "Forestry in Ontario," by Arthur Herbert Richardson, M. A., M. F., Forester of the Ontario Department of Forestry, and distributed by the Hon. William Finlayson, Minister of Lands and Forests of that province. In discussing the distribution of tree growth in Ontario, it lays a predicate by touching on the geology, drainage, and climate of the province in a brief way. Then follows a description of the important forest types, which is in turn followed by a full and enlightening section devoted to forest protection in the province, with an additional section especially covering air operations. These, begun in 1921, have developed steadily and grown to be one of the most important phases of the Canadian forest work, indicated by examples graphically citing actual assistance and service rendered by planes in extinguishing large forest fires. In addition to this, the author says: "While the primary purpose for which this service was constituted was to assist in forest-fire protection work, and while this work still

occupies sixty per cent of the total flying time, other activities are carried on even more extensively than formerly, namely aerial sketching, aerial photography, and special transportation . . . and one of the earliest uses to which aircraft was put in forestry work was that of aerial mapping." The book closes with two chapters on reforestation and nursery work and forest surveys and a valuable group of appendices giving data covering forestry activities in the province. The appearance of the booklet adds much to its attractiveness, for it is a beautiful piece of printing and the illustrations are many and striking. And the simple, board cover of pale gray is sheathed in an outer jacket of softly gleaming paper, made to simulate the bark of the birch.—L. M. C.

Enlargement of the bi-monthly forestry publication, the *Forest Worker*, from twenty-four to thirty-two pages has been announced by the United States Forest Service. Published every two months by the Forest Service, the *Forest Worker* is designed to give helpful information to owners and managers of forests or farm woodlands, woods workers and others interested in forestry problems and practices.

BIRDS OF MASSACHUSETTS AND OTHER NEW ENGLAND STATES. By Edward Howe Forbush. Illustrated by Louis Agassiz Fierstes. Part II. Massachusetts Department of Agriculture, Boston. Price, \$5.00.

In reading this, the second part of Dr. Forbush's monumental work on birds, one is impressed not only with his profound scientific knowledge of his subject, but with his ability to draw, in graphic prose, pictures of high moments in the lives of the birds, and to describe with vivid intensity facts which, otherwise presented, would be just facts. As written down by Dr. Forbush, they are unforgettable. And the habitat of the more than one hundred birds covered by this second volume of his book is described in such a way as to leave New England forever in the debt of the eminent author.

Volume I of this book on birds, which has been justly called "more than a bird book," dealt with the water, marsh, and shore birds. This second volume covers the game birds and pigeons, hawks and owls, cuckoos, woodpeckers, nighthawks, hummingbirds, flycatchers, horned larks, crows, jays and starlings, and the orioles and black birds. Thoroughly and accurately Dr. Forbush describes with meticulous care their distinctive characteristics, their range and habits, their economic bearing, and the whole scope of their lives from a biological standpoint. Nowhere have we read a more complete or interesting brief account of the passenger pigeon than the one given here by Dr. Forbush, which he prefaces with

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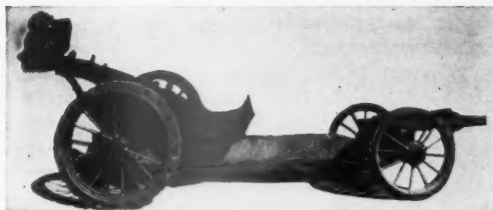
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It's easy if you use a Bartlett Jointed Tree Trimmer with a compound lever. Saves cost of buying several trimmers of different lengths. Prices F. O. B. Detroit. 8 ft. (2 sections) \$6.60; 12 ft. (3 sections) \$7.40; 16 ft. (4 sections) \$8.20. **BARTLETT MANUFACTURING CO.** 419 E. Lafayette Ave., Detroit, Mich.

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3,000-acre forest property ideally located for game preserve, summer estate, recreation community or memorial forest. Land covered with thrifty growth of forest trees, flowering trees, shrubs, flowers, etc. Good nucleus of game, such as pheasants, partridges, wild turkeys, rabbits, squirrels and deer. Fine fishing in Great Cacapon River, which runs near western boundary.

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\$2.50 a hundred, postpaid.
\$15.00 a thousand, F. O. B., Washington.

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Washington, D. C.

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the hope and belief that, though this "greatest of the pigeons" is generally considered extinct, there is a possibility that a few individuals may still continue to exist. The appalling story of their extermination, covering a period of over two hundred years, is the most terrible and pitiful chapter in the record of man's inhumanity to the birds.

The beautiful plates, in full color, which profusely illustrate the volume were painted by Louis Agassiz Fuertes, the premier American portrayer of bird life. Since doing this work, which is conceded to be his finest, he has passed into the Great Beyond, but fortunately the paintings for Volume III of this monumental work were also completed before his untimely death.

For informative reading, study, and research in this particular field, these three volumes will undoubtedly eventually constitute the outstanding authority.—L. M. C.

Scouts Start Forests in Indiana

Indiana Boy Scouts are to start three fifty-acre forests this year, at Jasonville, Clay City and Linton, on strip coal mining fields of the Maumee Collieries Company. The Company will provide trees and tools and will give quarters to the Scouts while they are doing the work. The first plantings will include 1,200 spruce, which it is planned to market as Christmas trees. Half the proceeds of Christmas-tree sales will go to the Scouts.

Large Timber Tract Added to Missoula National Forest

A tract of more than 220,000 acres in the vicinity of the Continental Divide and near the headwaters of the Big Blackfoot River, Dearborn River, and Prickly Pear Creek, was recently added to the Missoula National Forest in Montana. This brings the total area of the forest up to approximately a million and a quarter acres and places it fourth in size in Montana.

The area is mountainous in character and is well forested, having comparatively high value both for timber production and watershed protection. It is estimated to contain 325 million feet of saw timber besides a large amount of young growth and protection forest.

Lift Quarantine on Canadian Christmas Trees

Christmas trees and greens may be imported into the United States from the Province of Quebec, Canada, on and after July 1st as the result of an order just signed by the Secretary of Agriculture. The revocation of the quarantine was the result of the eradication of the gypsy moth in that province which was confirmed by field surveys made by the Canadian Department of Agriculture.

Cornell Professor Editor

Professor A. B. Recknagel, of the Department of Forestry at Cornell University, has been appointed by the editor of *Forstliche Rundschau*, the German digest of all forestry matters, as collaborator to cover all developments in American forestry literature. Professor Recknagel has served on the editorial board of the *Journal of Forestry*, the official organ of the Society of American Foresters, for fourteen years.

The *Forstliche Rundschau* is published in Neudamm, Germany. It succeeds the *Forstliche Jahresbericht*, which suspended publication in 1914.

Long-Leaf Seed Abundant in Alabama

A recent survey of seed conditions by the Alabama Commission of Forestry in the central and west central parts of the State discloses that at the present time there is a fairly good crop of the longleaf pine cones. The seed from these will reforest thousands of acres of cut-over lands if care is taken to prevent destruction by fire.

Where sufficient seed trees remain after lumbering, long-leaf pine will easily seed in from 2,000 to 5,000 young trees to the acre. However, repeated forest fires may destroy or ruin practically all these seedlings. A bushel and a half of cones will produce one pound of seed, and a pound of mast contains from 4,500 to 8,000 seeds. However, usually only about seventy-five per cent of the seed is capable of germination and birds and rodents may consume a large percentage of this.

Oklahoma Experiments with Planting in Treeless Belt

To counteract the belief that trees will not grow on the plains of Oklahoma, where they do not grow naturally, the Oklahoma Forest Commission, during the spring of 1928, established in cooperation with private land owners five demonstration and experimental plantings in the western part of the State. Land owners contributed a suitable planting site and labor to help plant trees. The Forest Commission outlined plans for the planting and furnished the trees. Scotch pine, Chinese elm, black walnut and bur oak trees were planted. It is planned by an extension of this program to have established, in all parts of the plains section of Oklahoma, plantings that will definitely show that trees will grow there, and at the same time give evidence of the best species to plant.

In this connection ten acres are to be planted in cooperation with the Boy Scouts of the Navajo Mountain Council and the city of Altus along the shores of Altus' new water supply reservoir near Lugert. This planting is to be made in the fall and next spring.

Restoration of Bronx Plant Life

The Park and Forestry Association of Bronx County, New York, of which Colonel Daniel P. Sullivan is chairman, recently passed a resolution asking residents and civic societies of the county to enlist for a concerted and sustained campaign of tree planting and floriculture for the next five years. The purpose of the resolution is to bring about a restoration of plant life in Bronx County, which was the theatre of operations of the Continental Army, by 1932, the 200th Anniversary of the birth of George Washington.

Ohio City Establishes Forest

One of the finest examples of reforestation work in Ohio by a municipality is on the lands owned by the city of Wellston, in Jackson and Vinton Counties. The area comprises about 400 acres, in the center of which is Lake Alma which supplies the city with its water. Surrounding the lake are steep hillsides, which are ideally adapted for reforestation work. In cooperation with the State Forestry Department, a planting program of five years has been outlined. This spring the city planted 10,000 red pine and 10,000 Scotch pine on the area.

In addition to the planting the city owns approximately 300 acres of second-growth timber, principally oak, chestnut, hickory and poplar. Woodland improvement work will also be practised upon the timber lands.

Nature Trails in Virginia

The Pedlar District of the Natural Bridge National Forest, in Virginia, has started a series of nature trails for the purpose of acquainting the public with trees and shrubs native to Virginia. Along the trails trees and shrubs are labeled, so the hiker may know both their common and scientific names.

Scion of Napoleon's Willow Planted in New York

There has recently been planted at Cornwallis' headquarters, at Alpine Landing, in the Palisades Interstate Park, New York, a four-year-old weeping willow tree of the most distinguished ancestral associations. It is a great-great-grandson of a willow that once shaded the original tomb of Napoleon, on the Island of St. Helena. Its grandparent shades the tomb of George Washington at Mount Vernon, Virginia, and three of its brothers are in locations associated with Washington.

The planting of the fourth of these brothers of the fourth generation from the tree that overhung Napoleon's lonely grave, at Cornwallis' headquarters has kindred associations, for Washington met Cornwallis in battle and defeated him, at Princeton, and captured him, with the aid of Napoleon's countrymen at Yorktown.

CONSIDER THE FIRS...



THEIR soft dense foliage provides a contrast in texture to Spruces and Pines not easily forgotten. We are offering small sizes in this advertisement—but our price list, just out—quotes prices on larger specimens as well. And, in fact, on almost every variety of Evergreen, Tree and Shrub in the more desirable sorts.

"X" Indicates each Transplanting
"S" Indicates Seedlings

ABIES (Fir) (100) (1000)

Balsamea (Balsam Fir)

Its characteristic clean odor and stately appearance make this a desirable variety even without its well known value as timber. Ideal evergreen for wet land. Popular variety for Christmas trees.

2 yr. S.	3 to 5 inches	\$4.00	\$20.00
3 year X		5.00	30.00
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brachyphilla (Nikko Fir)	(100)	(1000)
2 yr. S	\$10.00	\$75.00
4 to 6 inches X	12.50	112.50

concolor (White Fir)		
1-2 inches, S.	5.00	40.00
3 to 5 in. X	15.00	125.00
5 to 8 in. XX Bushy	25.00	225.00
8 to 10 in. XX Bushy	37.50	312.50
10 to 12 in. XX Bushy	44.00	375.00

douglasi (Douglas Fir)

One of the most beautiful conifers, it is also easy to grow and valuable as lumber. Popular variety for Christmas trees.

2 yr. S.	4.00	25.00
4 to 6 in. X	15.00	95.00
6 to 10 in. XX	25.00	225.00
8 to 10 in. XX	37.50	312.50
10 to 12 in. XX	44.00	375.00
12 to 15 XXX	50.00	437.00

Nordmanni (Nordmann's Fir)

2 yr. S.	10.00	90.00
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firma (Momi Fir)

2 yr. S.	6.00	50.00
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pectinata (Silver Fir)

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All for \$3.50

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3 Balsam Fir	12-15 in.
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Home grown strawberries! The pride of every home garden. The luscious delicacy of every home table. Now you too can grow them!

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Scott's Creeping Bent for Perfect Lawns!

Sod in six weeks! A rich, velvety stretch of lawn that chokes out weeds before they can grow! A deep, thick, uniform turf that's everlasting and makes your home a beauty spot! That's what you'll get if you plant Scott's Creeping Bent.

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Creeping Bent—long recognized as the ideal grass for golf putting greens—is now producing Super Lawns. Instead of sowing seed, you plant stolons or the chopped grass—and in a few weeks you have a luxuriant lawn like the deep green pile of a Turkish carpet. Read all about this unusual grass in our illustrated booklet "Bent Lawns." Mailed on request.

O. M. SCOTT & SONS CO.
451 Main Street Marysville, Ohio



Plans Shaping for Waycross Fair

With the announcement that a number of airplanes will give a demonstration in fire detection, plans for the second annual State Forestry Fair, at Waycross, Georgia, are about complete, according to the Georgia Forest Service, under whose auspices the meeting will be held. At a given signal the airplanes will take off with the object of locating and bringing back exact information on a set fire.

The fair will open at the Waycross Tobacco Warehouse with addresses by prominent timber owners and representatives of the various State forestry departments. The following day will be devoted to field demonstration of the methods of protecting pine forests. All modern machinery for forest conservation will be demonstrated. The third day will be devoted to demonstrations of the various ways of preparing the pine trees for marketing. This will include implements used in the sawmill and in turpentine.

Wisconsin Writer Makes Plea for Natural Beauty

In a recent issue of the *Milwaukee Journal* the following plea was made for the conservation of natural beauty by Brownie, the paper's road expert.

"Maytime is when the army of pilfering, destruction, vandalism and wastefulness moves out from the cities and makes itself a pestiferous nuisance. For a few Sundays now as we drive forth we shall find the wasters of wild flowers leaving their cars, sometimes partially blocking the roads, while they pick great bunches of flowers in woods and meadows.

"Some of them dig the flowers and trees up by the roots. Still others operate along the roadside in the mistaken idea that whatever grows outside the fence is public property and theirs for the taking. If they would look up the statute on this point they would be surprised to know that the farmer controls legally the land in front of his place out to the center of the road. Anything growing outside his fence, be it lilac, apple plum, or whatnot, is his property. That has been settled as a matter of law.

"Further, it is unlawful to transport trees, a custom carried on so extensively by motorists, from the woodland to the city home lot. The law is really intended to prevent spread of tree diseases and pests. It is an unpopular and oft-violated law right in our own state, but a law, nevertheless.

"It is not worth while to be lawbreakers, for few of the millions of little pine, balsam or spruce trees thus transported ever live. Nursery stock is not like the trees that grow wild. Let us enjoy the countryside to the utmost. Let us leave the beautiful roadside things for others to enjoy; for us to see again in their glory another year. Let us not waste, destroy and steal. Let us not contribute to the disrepute of the 'Sunday driver.'"

California Walnut Tree Dis- regards Seasons

A walnut tree in Santa Paula, California, has no respect for seasons. The usual time for walnut blooming is early in June, but this tree prefers September. Other trees generally have matured fruit in October, but it is bearing at the present time. The tree is owned by W. H. Henderson.

Seeks Seed of Rare Pines

The Eddy Tree Breeding Station, of Placerville, California, is making a thorough study of pine trees and is endeavoring to make nursery and plantation tests of every known species. During the past two years seed has been secured of eighty-seven different species and important varieties of pines from all parts of the world. There yet remain, however, about thirty-three species and varieties of which no seed has been secured, of which a third are native American species that occur within the borders of the United States. Among the species desired are the Apache pine, *Pinus apachea*; Arizona pine, *Pinus ponderosa arizonica*; foxtail pine, *Pinus balfouriana*; Mexican stone pine, *Pinus cembroides*; sand pine, *Pinus clausa*; spruce pine, *Pinus glabra*; Parry pine, *Pinus Parryana*; Mayr pine, *Pinus ponderosa mayriana*; *Pinus tropicalis*; and *Pinus cubensis*.

Woman Forester

Miss Helen Henderson, who was graduated this year from the forestry school at Colorado College, Colorado Springs, has taken examinations for the position of forest ranger. Last summer Miss Henderson went into the planting camp of the Pikes Peak National Forest.

New Buckeye Found in Illinois

Discovery of a new species of buckeye tree, hitherto unknown in Illinois, has been made by R. B. Miller, chief forester, State Department of Conservation. It is of the purple-flowered variety, but not *Aesculus octandra*, the sweet buckeye, which botanists have been looking for, and which had previously been reported from Golconda, Illinois, by E. J. Palmer.

The discovery of the new species was made during a preliminary examination of Horse Shoe Lake Fish and Game Preserve, in Alexander county. This tract has recently been purchased by the state of Illinois.

The new shrub, or small tree, occurs in great profusion around the rim of the island at Horse Shoe Lake, and is very highly decorative, being in May a blaze of purple or dark red color, with flowers in loose panicles, and having compound leaves like the other buckeyes and horse-chestnut.



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As long as the plants are dormant they
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Stock planted in the fall has an op-
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Order your stock for fall planting
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We specialize in ORCHIDS!
Our stock is the largest and
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now to insure full success.

Test your seeds!

PRACTICAL SEED-TESTERS, \$2 EACH

SALE OF TIMBER Navajo Indian Reservation Defiance Plateau Unit

Sealed bids in duplicate on forms provided therefor, marked outside "Bid, Defiance Plateau Unit" and addressed to "Superintendent, Southern Navajo Agency, Fort Defiance, Arizona", will be received until 2 o'clock p. m., mountain time, Tuesday, September 11, 1928, for the purchase of the merchantable western yellow pine timber, estimated to be 500,000,000 feet, on a tract comprising about 145,000 acres within the Navajo Indian Reservation, Arizona, described as follows: Townships 1 and 3 North, Range 6 West; Townships 1, 2 and 3 North, Ranges 7 and 8 West; Townships 25 and 26 North, Ranges 29 and 30 East; and the unsurveyed area lying between the last described townships and the Navajo Base Line, except approximately six and one half sections on which the timber is reserved for Agency sawmill purposes. Each bid must state the price per thousand feet, board measure, Scribner Decimal C, log scale, that will be paid for timber cut and scaled prior to April 1, 1934. On April 1, 1934, the price may be increased in the discretion of the Commissioner of Indian Affairs in an amount not greater than twenty percent of the original purchase price and at the beginning of each three-year period thereafter a similar increase in price may be made by the Commissioner. No bid of less than \$3.00 per thousand feet for the initial period of the contract will be considered. Each bid must be accompanied by a certified check for \$20,000 on a solvent National Bank payable to the Special Disbursing Agent, Southern Navajo Agency, Arizona. The deposit will be returned to unsuccessful bidders, applied as part of the purchase price of successful bidder against timber actually cut, or retained as liquidated damages if the bidder shall fail to execute contract and furnish satisfactory bond for \$50,000 within 60 days from the acceptance of his bid. The right to waive technical defects and to reject any and all bids is reserved. For copies of the contract, regulations, map of sale area, blanks for the submission of bids and other information apply to the Superintendent, Southern Navajo Agency, Fort Defiance, Arizona.

CHAS. H. BURKE
Commissioner

Washington, D. C., June 4, 1928.

FOREST-FIRE DETECTION and FIGHTING EQUIPMENT

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Washington, D. C.

Dean Dana Honored

In recognition of his eminent service in forestry, Syracuse University, Syracuse, New York, at its fifty-seventh Commencement conferred on Samuel Trask Dana, Dean of the School of Forestry and Conservation, University of Michigan, the degree of Doctor of Science.

In conferring the degree, Chancellor Flint said: "You served your country with distinction as officer in the National Forest Service in the days of peace and later as captain in her Army in the days of war. In the successive upward step of your career since, as then, you have manifested a high order of scientific knowledge, professional skill, research genius and administrative talents, as state forest commissioner, director of research, dean and editor; for your demonstrated worthiness, Syracuse University confers upon you the degree of Doctor of Science."

Foreign Visitors at Madison

The United States Forest Products Laboratory, at Madison, Wisconsin, which in the course of an ordinary year receives visitors from all parts of the world, recently had as guest C. Van de Koppel, a supervising forester from Celebes, an island located squarely on the equator in the Dutch East Indies.

Mr. Van de Koppel, who has been in the Far East for fourteen years, is in the United States in search of information regarding the utilization of copal, a gum used in the manufacture of varnishes, and which is produced by a tree that resembles our pines. He is also gathering information on the utilization of teak and rattan, the principal forest products of the islands in which he is stationed.

Sixteen German lumber dealers and furniture manufacturers, who are touring this country to inform themselves regarding American wood utilization methods, were also recent visitors to the laboratory. They were especially interested in the methods of wood gluing and kiln drying.

Organize Southeastern Section of Society of American Foresters

At a meeting recently held at Jacksonville, Florida, the Southeastern Section of the Society of American Foresters was organized. Lenthall Wyman, Director of the Southern Forest Experiment Station, at Starke, Florida, was named Chairman. Capt. I. F. Eldredge, of Fargo, Georgia, was elected Vice-Chairman, and S. J. Hall, of Jacksonville, was named Secretary-Treasurer.

Colorado Forestry School Has Summer Course

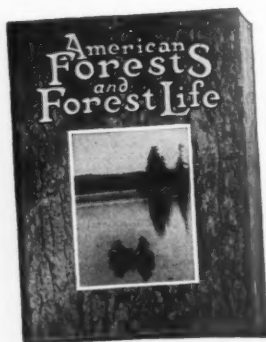
Forestry students at the Colorado Agricultural College, Fort Collins, Colorado, recently entered upon an eleven-week course of study and field work at the College forest of 1,600 acres of lodgepole pine and Englemann spruce. The forest was established in 1914.

Forest of Sandal Wood in India

A thick sandal wood forest has been discovered in the jungle region of Kankanhally, India, according to a report from Trade Commissioner Charles B. Spofford, Calcutta, to the Department of Commerce. The report stated that 600 tons of sandal wood, valued at \$216,000, are obtainable from the forest.

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August, 1928



Ask the
Forester?

Each Month Forestry Questions Submitted to the Association Will Be Answered in This Column. If an Immediate Reply is Desired a Self-Addressed, Stamped Envelope Must Accompany Letter.

QUESTION: Have the Southern States any amount of timber to be cut and marketed now that is not in swamps?—*G. W., North Carolina.*

ANSWER: Figures for 1925, published by the United States Forest Service, show that Louisiana, Mississippi, Alabama, and Texas are now the leading timber-producing States in the South. The larger portion of their timber cut is yellow pine, which grows on comparatively dry land. Hardwood timber is also produced, but this is largely the product of dry lands rather than swamp areas.

QUESTION: Why is the timber of South America not being cut and put on the markets of the world?—*G. R. W., North Carolina.*

ANSWER: Those familiar with South American timber state that the cost of logging, manufacturing, and transportation in those countries are all so high that exportation of timber is largely impossible. This is borne out by the fact that the seacoast cities find it more economical to import much of their construction lumber from North America and Europe than to use native timbers from the interior of their own continent. Logging is largely conducted in a primitive, wasteful fashion and very largely for local consumption. The principal exceptions to this are in a few specialized cases, such as the production of quebracha for tannin extract.

QUESTION: What is the work of an Extension Forester?—*K. M., New York.*

ANSWER: An Extension Forester is the forestry specialist on the staff of the Extension Service of a State College of Agriculture. He is a field teacher whose students are the farmers and landowners of the State who are interested in applying forestry principles to their properties. As a representative of the Agricultural Extension Service, he works through the county agricultural agent. At the same time his program is adjusted to that of the State For-

ester. The subjects taught by an Extension Forester include forest planting, woods management, timber estimating, timber marketing, and wood preservation. Extension Foresters are now employed in thirty-one States.

QUESTION: At what time of year should ash trees be transplanted?—*R. E. W., Ohio.*

ANSWER: The most satisfactory time to transplant any broad-leaf tree is during the season after the leaves have fallen. This may be in the early autumn or preferably in the early spring. The experience of most tree planters is that broad-leaf trees, such as the ash, are most successfully planted in the early spring, after the frost is out of the ground, but before growth has started. Fall planting is often successful, but is more apt to meet with difficulties.

QUESTION: Can you tell me where the mountain lookout system was first developed for systematic forest fire protection?—*G. D. B., Virginia.*

ANSWER: In Maine. Mr. Austin Cary, in an address some years ago before the Maine Forestry Association, is authority for the statement that Squaw Mountain, southwest of Moosehead Lake, was the first point occupied and that Mr. William Hilton of Bangor, Maine, was the first lookout.

QUESTION: I have been told that there is a German method of protecting trees against insects by injecting poison into the growing wood of the tree, where the sap will carry it to limbs and leaves. Has this method proved successful?—*R. R. B., Indiana.*

ANSWER: As to the value of tree injections, perhaps in no other respect are unsophisticated tree-owners more imposed upon than in the matter of injections of various cure-all preparations under the bark. Suffice it to say that such treatments are entirely without merit in controlling insects and often are decidedly injurious to the trees themselves.

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New York Destroys Currant

A campaign to eliminate the cultivated black currant in New York has been planned by the State Conservation Department. The currant is declared a public nuisance, and such branches, roots, cuttings, or plants now planted or growing in the State are to be destroyed. The black currant, due to its susceptibility to blister rust, is a deadly enemy of the white pine in the State, the Department rules.

East Leads in Tree Planting

Of thirty-four States and two Territories, cooperating with the Federal Government in the distribution of forest-planting stock under the reforestation provisions of the Clarke-McNary Law, nine distributed ninety per cent of the total as reported by the United States Forest Service in a recent bulletin on the distribution of planting stock by cooperating States for the year 1927. The total distribution was 56,020,929 trees.

The two States which led in reforestation were New York and Pennsylvania, which together distributed sixty-five per cent of the total number of trees distributed by the cooperating States. New York distributed 23,392,000 trees and Pennsylvania 14,490,000. The third largest distribution was made by Massachusetts with 3,515,637; the fourth by Ohio with 2,572,000; the fifth by Vermont with 2,088,000; the sixth by New Hampshire with 1,664,694; the seventh by Wisconsin with 1,604,900; the eighth by Connecticut with 1,348,000 and the ninth by New Jersey with 1,152,300.

Valuable Walnut Tree in Nebraska

A walnut tree near Nashville, Nebraska, was held to be worth \$5,000 by a district judge in Nebraska, in a suit filed against a sawmill company by the owner of the tree.

It was charged that a Des Moines firm cut down the tree without his permission, and that it was of value to him, not only for its commercial worth but as a landmark. The tree was 100 years old and had been a landmark on the Manley farm for fifty years.

The tree was four feet wide at the base, 100 feet high and shaded the entire yard of its owner.

Urges Federal Owned Lands for State Parks

Unless plans be immediately formulated for a comprehensive system of State Parks and Forests through the acquisition of Federal-owned lands, the loss of many outstanding recreational areas may result, declared Stephen T. Mather, Director of the National Park Service, in an address before the eighth Conference on State Parks at San Francisco, California, June 26 to 29, inclusive.

"Investigation has revealed many fine areas under the ownership of the Federal Government," said Mr. Mather, "either as public lands, abandoned or useless military reservations, naval reservations and surplus lighthouse reservations, which are available to the States for purchase for recreational purposes. Many of these areas are offered by the Government for purchase at \$1.25 an acre, which is the minimum price prescribed under general authority for the disposal of Federal lands, yet many of these areas have been tendered the various States under special acts of Congress without charge when justification could be found for this deviation from the general policy.

"In addition to the various classes of areas mentioned, there may be other possibilities whereby the States may acquire Federal-owned properties the value of which would be greater for State development, and those may be brought out through contacts with Federal administrators and by working out State development programs in coordination with Federal projects. The work of the National Conference on State Parks has brought about a more complete understanding between Federal and State administrators of recreational areas and the past has shown without doubt that the Federal authorities are keenly alive to the advantages in proper cases of turning over areas for local development and administration. But there must be no time lost in proceeding with programs to the creation of a comprehensive system of State Parks, as with the rapid private development in areas which may now be considered of recreational value, delay may result in the loss of many opportunities in the future."

Mr. Mather, who is Chairman of the National Conference on State Parks, named Camp Upton, in New York Matanzas Military Reservation, in Florida; Fort Hunt, in Virginia; Fort Washington, in Maryland, and Fort Wayne, in Michigan, among the present Federal reservations that may be secured for State parks.

Others who addressed the conference were Dr. J. C. Merriam, President of the Carnegie Institute of Washington, and of the Save the Redwoods League, who spoke on "Parks as an Opportunity and Responsibility of the States"; Governor C. C. Young, of California, on "The California Park Situation"; Dr. Ray Lyman Wilbur, President of Stanford University, on "The Scientific and Educational Value of State Parks"; William E. Colby, Chairman, California State Park Commission, and Major William A. Welch, General Manager of the Palisades Interstate Park, New York.

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Map Park by Airplane

Lynn Woods, a recreational and watershed reservation of more than 2,000 acres and municipally maintained as a public park at Lynn, Massachusetts, is being mapped by airplane. The purpose of the survey is to aid visitors to have maps of the various ponds, paths, roads and trails.

Hunters Increasing

During the 1927 season, more than 5,750,000 hunting licenses for the taking of wild game were issued to sportsmen throughout the United States and Alaska, and the revenue to the States amounted to more than \$7,800,000, according to the United States Biological Survey. This is an increase in numbers of licenses issued and fees received over the preceding three years. In 1924, licenses numbered 4,395,038 and the fees paid were \$5,594,982. In 1925, 4,904,740 hunters paid \$6,190,863, while in 1926 hunting licenses to the number of 5,168,353 were issued, bringing a revenue of \$6,872,812 to the States. During the season just past, New York State with 620,414 licenses and fees of \$822,415 headed the list both in licenses and money returns.

Horse's Hoofs Start Fire

Sparks flying from a horse's hoofs started a fire which recently swept more than 2,000 acres of range land in Tuolumne County, California, according to State Forester M. B. Pratt. Fires starting in this manner have often been reported, according to Mr. Pratt, but this is the first time a report has been verified.

California Has Forest Air Patrol

Airplane patrol of the National Forests of California, began July 1. Planes will be used only for reconnaissance of forested areas following heavy thunder and lightning storms and during periods of smoke and fog when the visibility from ground lookouts is poor; for aerial survey of going fires, and for the emergency transportation of men and fire fighting supplies and equipment to large conflagrations.

The patrol will be handled throughout northern California by the Pacific Coast Air Service Company of Oakland, and in southern California by the Western Air Express of Los Angeles. For the safety of air patrol pilots and observers flying over forested areas where there are no regular landing fields, the Forest Service is improving and marking thirty-five emergency fields within the National Forests of the State.

Gourds for Bird Houses

(Continued from page 486)

most of us. In the preparation of gourds for bird-houses, the immature fruits are discarded and the well-ripened ones placed in a dry loft or attic in such a way that they do not touch each other. During the winter the contents will become dry and rattly, like those of squashes. Beginning with an auger and following with a sharp knife or clippers, a hole of the desired size is cut in the side of the gourd and a long-handled cheap spoon may be bent in such a way as to scoop out the contents. Sometimes, in very large or long gourds, it is desirable to saw off a section at the bottom and wire it back in place by means of an awl and copper wire, after cleaning the interior. An essential point consists in making a few awl holes in the bottom of each gourd to allow the escape of rain water or melting snow. For suspending the gourds make gimlet holes at a suitable point and then insert rather larger copper wire, which may be twisted about a branch or other support for the bird-house. For martins or other birds which like to build in colonies, a number of gourds may be suspended from a single cross-bar nailed to the top of a pole set in the garden.



Photo by K. D. Swan, Courtesy U. S. Forest Service

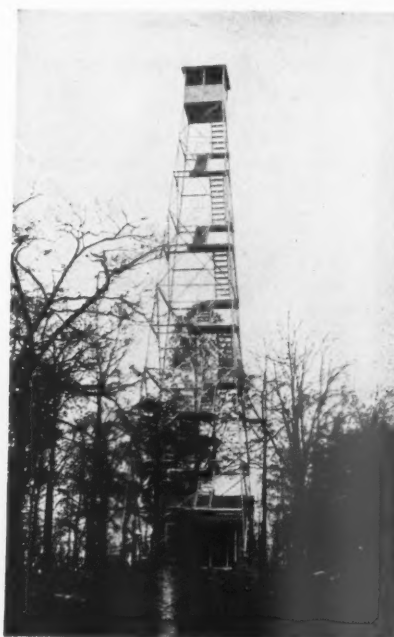
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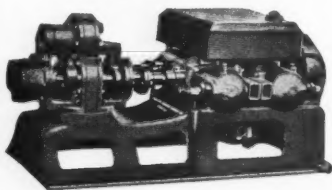
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National Forests Being Tested for Use of Radio

The National Forests are to be tested for the use of radio communication in fire protection work, according to the United States Forest Service.

The advice of national authorities on radio and preliminary trials of radio apparatus disclose the fact that while radio communication under ordinary conditions is fairly reliable no one knows whether it can be made to work under National Forest conditions where low powered radio waves will be affected by absorption by trees and the deflecting influence of rough topography. The only way to find out, says the Forest Service, is painstakingly to test the National Forests to see if they are adapted to radio. Radio apparatus must be tried under all kinds of conditions of topography, nearness to trees and density of timber in order to determine the conditions under which radio can be depended on and the limitations to its use in mountainous and timbered country.

Everyone familiar with forest fire-control work, says the Forest Service, will appreciate the desirability of a radio set light enough to be carried on a man's back with his emergency rations, enabling a fireman when he reaches a fire to inform headquarters either that he does or does not need help. Whether this extreme requirement for lightness can be met is uncertain; but it now appears reasonably sure that a low-power, code-transmitting and voice-receiving set can be developed that will be light enough to be packed on a horse and sturdy and simple enough to be used in the thousands of trail-construction camps maintained on the National Forests during the fire season. It is vital to keep these camps in communication in order that the trail makers may be summoned to help in fighting fires, but it is practically impossible to keep them all tied in with emergency lines to the existing system of telephone communication. Trail camps move frequently, and there are too many of them to permit of fully workable communication by ground wire.

Many Moose Killed in Maine

Open season on bull moose in Maine last fall resulted in the killing of one hundred of these big game animals. According to the Department of Inland Fisheries and Game, the carcasses of sixty-seven moose killed during the open season were inspected for transportation. It was also announced that moose are not plentiful enough in the State to warrant another open season for some time to come.

Entomology to be Discussed

The Fourth International Congress of Entomology will be held at Ithaca, New York, August 12th to 18th. Four general sessions will be held at which papers of wide interest will be presented by leading entomologists of the world. The first general session will take place on Monday morning, August 13th at 10 o'clock, when Dr. Livingston Farrand, President of Cornell University, will deliver an address of welcome to the delegates and Dr. L. O. Howard, President of the Congress, will make the opening address. On the afternoons of Monday, Tuesday, Wednesday and Thursday sectional meetings devoted to different branches of entomology will be held.

Sectional meetings of special interest to those concerned with forestry will be held on Tuesday, Wednesday and Thursday afternoons. The subject of discussion on Tuesday afternoon will be bark beetles and other forest insects with particular reference to their control. On Wednesday afternoon the sectional meeting will take up silvicultural practices in their relation to insect control, and on Thursday afternoon, miscellaneous forest and shade tree insects will be discussed.

Turpentine Operators Must Pay License Tax

When the owner of a turpentine still and the operator are different persons, it is the operator who must pay the State privilege tax, according to an opinion given by the Attorney General's office to the Alabama State Commission of Forestry. The Commission is the public agency through which the forest industries maintain most of their contacts with the State.

While the law states that the "owner or operator" must pay the tax for the operation of the still, it appears that since all license taxes are due on account of engaging in the different lines of business, the claim that the still may be rented or leased from another person does not relieve the operator from paying the license fee prescribed for engaging in the business of distilling turpentine and rosin. The case is somewhat analogous to a restaurant proprietor who does not own the building in which he conducts his business. It is the business in which he is engaged on which the license fee is due rather than on the ownership of the building.

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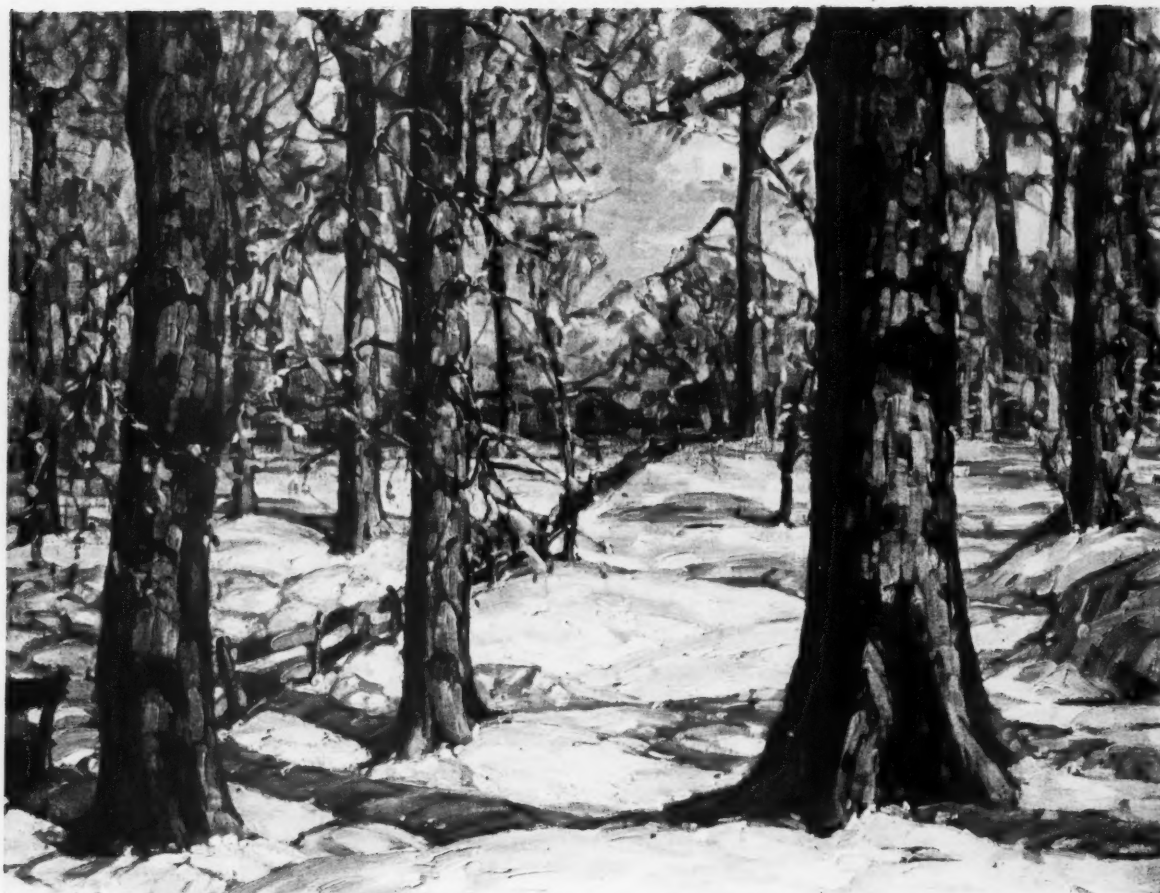
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